Eddie Baza Calvo
Governor

Anthony C. Blaz
Director, Dept. of Admin.

GENERAL SERVICES AGENCY
Government of Guam
148 Route 1 Marine Drive Corp
Piti, Guam 96915

Ray Tenorio
Lt. Governor

Alfred F. Duenas
Deputy Director

February 24, 2015

Multi-Step Invitation for Bid GSA/DOE-030-15

PURCHASE, INSTALLATION, AND MAINTENANCE FOR ACCESS CONTROL, INTRUSION DETECTION AND CCTV SECURITY ELECTRONIC SYSTEM
(SECURE OUR SCHOOLS ACT OF 2013)

AMENDMENT #1

1. Amend to change on page 3 under "Invitation for Bid" and page 4 under "Multi-Step Invitation for Bid" to the following:

   From: (Page 3)
   Technical Sealed bids will be received until March 12, 2015 at 2:00 p.m.

   To Now Read: (Page 3)
   Technical Sealed bids will be received until March 27, 2015 at 5:00 p.m.

   From: (Page 4)
   Submission Date: 3/12/2015 at 2:00pm

   To Now Read: (Page 4)
   Submission Date: 3/27/2015 at 5:00pm

2. Amend to change the "A Mandatory Pre-Bid Conference will be held on March 2, 2015 at 10:00am and a Site inspection will follow right after. To be held at the General Services Agency Conference Room in Piti Guam to now read the following:

   "A Mandatory Pre-Bid Conference will be held on March 6, 2015 at 10:00am and a Site inspection will follow right after. To be held at the General Services Agency Conference Room in Piti Guam. Site inspection may continue thru March 7, 2015

All others remains unchanged.

CLAUDIA S. ACFALLE
Chief Procurement Officer

GSA GENERAL SERVICES AGENCY
(Ahensian Setbision Hinirat)
Government of Guam
148 Route 1 Marine Drive, Piti Guam 96915
Tel: 475-1713 * Telefax: 472-4217; 475-1716; 475-1727

Accountability * Impartiality * Competence * Openness * Value

MULTI-STEP BID NO. : GSA/DOE-030-15

DESCRIPTION:
PURCHASE, INSTALLATION AND MAINTENANCE FOR ACCESS CONTROL, INTRUSION DETECTION, AND CCTV SECURITY ELECTRONIC SYSTEMS (SECURE OUR SCHOOLS ACT OF 2013)

SPECIAL REMINDER TO PROSPECTIVE BIDDERS

Bidders are reminded to read the Sealed Bid Solicitation and Instructions, and General Terms and Conditions attached to the Multi-Step Bid to ascertain that all of the following requirements checked below are submitted in the bid enveloped, one original and four copies, at the date and time for bid submission.

(X) BID GUARANTEE (15% of Bid Amount) May be in the form of;
Reference #11 on the General Terms and Conditions

a. Cashier's Check or Certified Check
b. Letter of Credit must not expire earlier than ninety (90) days from the date of submittal
c. Surety Bond – Valid only if accompanied by:

1. Current Certificate of Authority issued by the Insurance Commissioner;
2. Power of Attorney issued by the Surety to the Resident General Agent;
3. Power of Attorney issued by two (2) major officers of the Surety to whoever is signing on their behalf.

(X) STATEMENT OF QUALIFICATIONS

(X) BROCHURES/DESCRIPTIVE LITERATURE;

(X) AFFIDAVIT DISCLOSING OWNERSHIP and COMMISSION

a. Date of signature of the person authorized to sign the bid and the notary date must be the same.

(X) OTHER REQUIREMENTS:
Non-Collusion Affidavit, D.O.L. Wage Determination Affidavit, Restriction against Sexual Offenders Affidavit, No Kickbacks or Gratuities Affidavit and Ethical Standards Affidavit, and Affidavit re Contingent Fees, Certification Regarding Lobbying

NOTE: TECHNICAL AND BID COST SHALL BE SUBMITTED IN SEPARATE ENVELOPES LABELED "TECHNICAL BID" AND "BID COST". ALL REQUIRED FORMS AND AFFIDAVITS SHALL BE SUBMITTED IN THE ENVELOPE LABELED "TECHNICAL BID". REQUIRED BID BOND SHALL BE SUBMITTED IN THE ENVELOPE LABELED "BID COST". SHALL BE SUBMITTED. DO NOT INCLUDE BID COST WITH TECHNICAL BID PACKAGE

***NOTE: IF BID COST IS INCLUDED WITH THE TECHNICAL PROPOSAL IT WOULD BE DEEMED AN AUTOMATIC DISQUALIFICATION OR REJECTION.**

This reminder must be signed and returned in the bid envelope together with the technical bid. Failure to comply with the above requirements may be cause for disqualification and rejection of the bid.

On this _____ day of _____, 2015, I, _____,

authorized representative of _____ acknowledge receipt of this special reminder to prospective bidders with the above referenced Multi-Step Bid.

_____
Bidder Representative's Signature

Multi-Step Bid No.: GSA/DOE-030-15

PURCHASE, INSTALLATION AND MAINTENANCE OF ACCESS CONTROL, INTRUSION DETECTION, AND CCTV SECURITY ELECTRONIC SYSTEMS
(SECURE OUR SCHOOLS ACT OF 2013)

ACKNOWLEDGEMENT RECEIPT FORM

Please be advised that to be considered a prospective bidder you must fill out this Acknowledgement receipt form. Please submit by fax form to 475-1727

Acknowledgement Receipt Form must be submitted no later than three (3) days upon receipt of IFB package.

Name _____

Signature _____

Date _____

Time _____

Contact Number _____

Fax Number _____

Contact Person regarding IFB _____

Title _____

E-Mail Address _____

Company/Firm _____

Address _____

Note: GSA will not be liable for failure to provide notice to any party who did not register contact information.

All questions and concerns in regards to the Multi-Step bid must be submitted **via fax** no later than **March 09, 2015** before the close of business. IFB Solicitation Number must be noted on all inquiries submitted to GSA.

Contact person for this solicitation is Ms. Anita T. Cruz, Buyer Supervisor.

PROJECT OVERVIEW

The General Services Agency ("GSA"), on behalf of the Government of Guam, is soliciting sealed bids for the purchase, installation and maintenance of Access Control, Intrusion Detection, and CCTV Security Electronic Systems for the Guam Department of Education (GDOE) (the "Project"). This Project is relative to Public Law 32-009, Installation and Maintenance of Electronic or other Security Systems at all Guam Public Schools to be known as the "Secure Our Schools Act" of 2013. The Project covers a total of 25 schools.

INVITATION FOR BID

This IFB is issued in accordance with 5 G.C.A. § 5211 (h) and 2 Guam Administrative Rules and Regulations ("GARR") § 3109 (r) Multi-Step Sealed Bidding. **Technical Sealed bids will be received until March 12, 2015 at 2:00 p.m.** on ChST the Bid Submission Deadline set forth in the Schedule of Events at the customer service desk at GSA located at the, 148 South Marine Corps Drive, Piti, Guam. All bids will not be publicly opened and read aloud during the Phase I of the Multi-Step Bidding Method. All Bidders whose bid is deemed "Acceptable" will be invited to the Phase II (Opening of Bid Price) process of the Multi-Step Bidding Method which will be conducted at the GSA conference room located at the GSA, 148 South Marine Corps Drive, Piti, Guam. Bids submitted after the bid submission deadline set forth in the Schedule of Events will not be considered. All bids must be accompanied by a bid security in the amount of 15% of the total bid price. Bid security may be in the form of a bid bond, certified check or cashier's check made payable to Treasurer of Guam. Bid Security Bond MUST be inserted in the "Bid Price" envelope.

This Invitation for Bid package consists of the following documents:

Bid Invitation Documents

a. Schedule of Events
b. Project Overview & Invitation for Bid
c. Instructions to Bidders & General Information
d. Acknowledgment of Receipt Form
e. Bid Submittal Document

Documents

a. Bid Form
b. Bid Security
c. Affidavit Disclosing Ownership and Commissions
d. Affidavit Regarding Non□Collusion
e. Affidavit Regarding No Gratuities or Kickbacks
f. Affidavit Regarding Contingent Fees
g. Affidavit Regarding Ethical Standards
h. Declaration Regarding Compliance with U.S. DOL Wage Determination
i. Restriction Against Sexual Offenders Affidavit

MULTI-STEP BID

ISSUING OFFICE:

GENERAL SERVICES AGENCY (GSA)
GOVERNMENT OF GUAM
148 ROUTE 1, MARINE DRIVE
PITI, GUAM 96915

CLAUDIA S. ACFALLE
Chief Procurement Officer

DATE ISSUED: **February 24, 2015** MULTI-STEP BID NO: **GSA/DOE-030-15**

BID FOR: **PURCHASE, INSTALLATION AND MAINTENANCE OF ACCESS CONTROL, INTSRUSION DETECTION, AND CCTV SECURITY ELECTRONIC SYSTEMS (SECURE OUR SCHOOLS ACT OF 2013)**

SPECIFICATION: See Attached

DESTINATION: GUAM DEPARTMENT OF EDUCATION (GDOE)

REQUIRED DELIVERY DATE: Completion of Installation per School is Sixty (60) Calendar Days upon receipt of Purchase Order. Maintenance is for a period of Two (2) years with an option to renew on a year to year basis for an additional three (3) years upon the availability of funds. Maintenance starts immediately upon acceptance of installation and completion of electronic system.

INSTRUCTION TO BIDDER:

INDICATE WHETHER: ____ INDIVIDUAL ____ PARTNERSHIP ____ CORPORATION

INCORPORATED IN: _____

Each bidder shall submit one original and four copies of the technical bid no later than Submission **Date: 3/12/2015 at 2:00pm, to the GSA.** The technical bids (one original and four copies) shall be submitted in a sealed envelope marked conspicuously with the bidder name and address, bid number, and the type of proposal (Technical Bid/**Bid Cost**). Bid submitted after the time and date specified above shall be rejected. See attached General Terms and Conditions. **Technical bids submitted will not be publicly opened.**

The undersigned offers and agrees to furnish within the time specified, the articles and services at the price stated opposite the respective items listed on the schedule provided, unless otherwise specified by the bidder. In consideration to the expense of the Government in opening, tabulating, and evaluating this and other bidders, and other considerations, the undersigned agrees that this bid remain firm and irrevocable within **90** calendar days from the date of submittal to supply any or all the items which prices are offered.

NAME AND ADDRESS OF OFFEROR:

_____

_____

_____

SIGNATURE AND TITLE OF PERSON AUTHORIZED TO SIGN THIS BID:

_____

AWARD: CONTRACT NO.: _____ **AMOUNT:** _____ **DATE:** _____

ITEM NO(S). AWARDED: _____

CONTRACTING OFFICER:

_____
CLAUDIA S. ACFALLE
Chief Procurement Officer

NAME AND ADDRESS OF CONTRACTOR:

_____

_____

_____

SIGNATURE AND TITLE OF PERSON AUTHORIZED TO SIGN THIS CONTRACT:

_____

SCHEDULE OF EVENTS

EVENT	DATE	LOCATION
IFB Issue Date	February 24, 2015	General Services Agency 148 South Marine Corps Dr Piti, Guam 96915
Mandatory Pre-bid Conference **Site Inspection to follow after**	March 2, 2015 at 10:00am	GSA Conference Room
Deadline for Receipt of Written Questions	March 09, 2015 no later than 5:00pm	GSA Office
Issuance of Answers to Written Questions	No Later Than March 20, 2015	GSA Office and Website
Bid Submission Deadline	March 12, 2015 at 2:00pm	GSA Customer Service Desk
Technical Evaluation Period	Anticipated date beginning March 30, 2015 thru April 2, 2015	GSA Office
Phase II Bid Opening	Anticipated date of April 10, 2015	GSA Conference Room

AFFIDAVIT RE ETHICAL STANDARDS

CITY IN _____)
) ss.
ISLAND OF GUAM)

_____[*state name of affiant signing below*], being first duly sworn, deposes and says that:

The affiant is _____ [*state one of the following: the offeror, a partner of the offeror, an officer of the offeror*] making the foregoing identified bid or proposal. To the best of affiant's knowledge, neither affiant nor any officers, representatives, agents, subcontractors or employees of offeror have knowingly influenced any government of Guam employee to breach any of the ethical standards set forth in 5 GCA Chapter 5, Article 11. Further, affiant promises that neither he or she, nor any officer, representative, agent, subcontractor, or employee of offeror will knowingly influence any government of Guam employee to breach any ethical standards set forth in 5 GCA Chapter 5, Article 11. These statements are made pursuant to 2 GAR Division 4 § 11103(b).

_____
Signature of one of the following:
Offeror, if the offeror is an individual;
Partner, if the offeror is a partnership;
Officer, if the offeror is a corporation.

Subscribed and sworn to before me
this _____ day of _____, 201__.

_____
NOTARY PUBLIC
My commission expires _____, _____.

THIS AFFIDAVIT MUST BE SUBMITTED IN THE ENVELOPE LABELED "TECHNICAL BID".

AFFIDAVIT re NO GRATUITIES or KICKBACKS

CITY IN _____)
) ss.
ISLAND OF GUAM)

_____[*state name of affiant signing below*], being first duly sworn, deposes and says that:

1. The name of the offering firm or individual is [*state name of offeror company*] _____. Affiant is _____ [*state one of the following: the offeror, a partner of the offeror, an officer of the offeror*] making the foregoing identified bid or proposal.

2. To the best of affiant's knowledge, neither affiant, nor any of the offeror's officers, representatives, agents, subcontractors, or employees have violated, are violating the prohibition against gratuities and kickbacks set forth in 2 GAR Division 4 § 11107the. Further, affiant promises, on behalf of offeror, not to violate the prohibition against gratuities and kickbacks as set forth in 2 GAR Division 4 § 11107the.

4. To the best of affiant's knowledge, neither affiant, nor any of the offeror's officers, representatives, agents, subcontractors, or employees have offered, given or agreed to give, any government of Guam employee or former government employee, any payment, gift, kickback, gratuity or offer of employment in connection with the offeror's proposal.

5. I make these statements on behalf of myself as a representative of the offeror, and on behalf of hte offeror's officers, representatives, agents, subcontractors, and employees.

_____
Signature of one of the following:
Offeror, if the offeror is an individual;
Partner, if the offeror is a partnership;
Officer, if the offeror is a corporation.

Subscribed and sworn to before me

this _____ day of _____, 201__.

_____
NOTARY PUBLIC
My commission expires _____, _____.

THIS AFFIDAVIT MUST BE SUBMITTED IN THE ENVELOPE LABELED "TECHNICAL BID".

Eddie Baza Calvo
Governor

Anthony C. Blaz
Acting Director, Dept. of Admin.

GENERAL SERVICES AGENCY
Government of Guam
148 Route 1 Marine Drive Corp
Piti, Guam 96915

Ray Tenorio
Lt. Governor

Alfred Duenas
Deputy Director

Special Provisions

Restriction against Sex Offenders Employed by service providers to Government of Guam from working on Government Property.

If a contract for services is awarded to the bidder or offeror, then the service provider must warranty that no person in its employment who has been convicted of a sex offense under the provisions of chapter 25 of Title 9 of Guam code Annotated or of an offense defined in Article 2 of chapter 28 of Title 9 of the Guam Code annotated, or who has been convicted in any other jurisdiction of an offense with the same elements as heretofore defined, or who is listed on the Sex Offender Registry, shall provide services on behalf of the service provider while on government of Guam property, with the exception of public highways. If any employee of a service provider is providing services on government property and is convicted subsequent to an award of a contract, then the service provider warrants that it will notify the Government of the conviction within twenty-four (24) hours of the conviction, and will immediately remove such convicted person from providing services on government property. If the service provider is found to be in violation of any of the provisions of this paragraph, then the government will give notice to the service provider to take corrective action. The service provider shall take corrective action within twenty-four (24) hours of notice from the Government, and the service provider shall notify the Government when action has been taken. If the service providers fail to take corrective steps within twenty-four (24) hours of notice from the Government, then the Government in its sole discretion may suspend temporarily and contract for services until corrective action has been taken.

_____
Signature of Bidder Date

Proposer, if an individual;
Partner, if a partnership;
Officer, if a corporation.

Subscribed and sworn to before me

this _____ day of _____, 201__.

_____
NOTARY PUBLIC
My commission expires _____, _____.

THIS AFFIDAVIT MUST BE SUBMITTED IN THE ENVELOPE LABELED "TECHNICAL BID".

Eddie Baza Calvo
Governor

Anthony C. Blaz
Acting Director, Dept. of Admin.

GENERAL SERVICES AGENCY
Government of Guam
148 Route 1 Marine Drive Corp
Piti, Guam 96915

Ray Tenorio
Lt. Governor

Alfred Duenas
Deputy Director

FORM E

DECLARATION RE COMPLIANCE WITH U.S. D.O.L. WAGE DETERMINATION

Procurement No: **GSA/D0E-030-15**
PURCHASE, INSTALLATION AND MAINTENANCE OF ACCESS CONTROL, INTRUSION DETECTION, AND CCTV SECURITY SYSTEMS (SECURE OUR SCHOOL SAFE ACT OF 2013)

Name of Offeror Company: _____ hereby certifies under penalty of perjury:

(1) That I am _____(the offeror, a partner of the offeror, an officer of the offeror) making the bid or proposal in the foregoing identified procurement;

(2) That I have read and understand the provisions of 5 GCA § 5801 and § 5802 which read:

§ 5801. Wage Determination Established.

In such cases where the government of Guam enters into contractual arrangements with a sole proprietorship, a partnership or a corporation ("contractor") for the provision of a service to the government of Guam, and in such cases where the contractor employs a person(s) whose purpose, in whole or in part, is the direct delivery of service contracted by the government of Guam, then the contractor shall pay such employee(s) in accordance with the Wage Determination for Guam and the Northern Mariana Islands issued and promulgated by the U.S. Department of Labor for such labor as is employed in the direct delivery of contract deliverables to the government of Guam.

The Wage Determination most recently issued by the U.S. Department of Labor at the time a contract is awarded to a contractor by the government of Guam shall be used to determine wages, which shall be paid to employees pursuant to this Article. Should any contract contain a renewal clause, then at the time of renewal adjustments, there shall be made stipulations contained in that contract for applying the Wage Determination, as required by this Article, so that the Wage Determination promulgated by the U.S. Department of Labor on a date most recent to the renewal date shall apply.

§ 5802. Benefits.

In addition to the Wage Determination detailed in this Article, any contract to which this Article applies shall also contain provisions mandating health and similar benefits for employees covered by this Article, such benefits having a minimum value as detailed in the Wage Determination issued and promulgated by the U.S. Department of Labor, and shall contain provisions guaranteeing a minimum of ten (10) paid holidays per annum per employee.

(3) That the offeror is in full compliance with 5 GCA § 5801 and § 5802, as may be applicable to the procurement referenced herein;

(4) That I have attached the most recent wage determination applicable to Guam issued by the U.S. Department of Labor. [INSTRUCTIONS – Please attach!]

_____
Signature Date

THIS AFFIDAVIT MUST BE SUBMITTED IN THE ENVELOPE LABELED "TECHNICAL BID".

WD 05-2147 (Rev.-16) was first posted on www.wdol.gov on 08/05/2014

****

REGISTER OF WAGE DETERMINATIONS UNDER THE SERVICE CONTRACT ACT
By direction of the Secretary of Labor

U.S. DEPARTMENT OF LABOR
EMPLOYMENT STANDARDS ADMINISTRATION
WAGE AND HOUR DIVISION
WASHINGTON D.C. 20210

Diane C. Koplewski
Director

Division of
Wage Determinations

Wage Determination No.: 2005-2147
Revision No.: 16
Date Of Revision: 07/25/2014

States: Guam, Northern Marianas, Wake Island

Area: Guam Statewide
Northern Marianas Statewide
Wake Island Statewide

Fringe Benefits Required Follow the Occupational Listing

OCCUPATION CODE - TITLE	FOOTNOTE	RATE
01000 - Administrative Support And Clerical Occupations		
01011 - Accounting Clerk I		12.50
01012 - Accounting Clerk II		13.53
01013 - Accounting Clerk III		15.59
01020 - Administrative Assistant		17.67
01040 - Court Reporter		15.38
01051 - Data Entry Operator I		10.48
01052 - Data Entry Operator II		11.99
01060 - Dispatcher, Motor Vehicle		13.06
01070 - Document Preparation Clerk		12.25
01090 - Duplicating Machine Operator		12.25
01111 - General Clerk I		10.29
01112 - General Clerk II		11.28
01113 - General Clerk III		12.32
01120 - Housing Referral Assistant		17.15
01141 - Messenger Courier		10.12
01191 - Order Clerk I		11.23
01192 - Order Clerk II		12.25
01261 - Personnel Assistant (Employment) I		14.33
01262 - Personnel Assistant (Employment) II		14.90
01263 - Personnel Assistant (Employment) III		16.48
01270 - Production Control Clerk		18.34
01280 - Receptionist		9.67
01290 - Rental Clerk		11.10
01300 - Scheduler, Maintenance		13.75
01311 - Secretary I		13.75
01312 - Secretary II		15.38
01313 - Secretary III		17.15
01320 - Service Order Dispatcher		11.57
01410 - Supply Technician		17.67
01420 - Survey Worker		15.26
01531 - Travel Clerk I		11.61
01532 - Travel Clerk II		12.57
01533 - Travel Clerk III		13.44
01611 - Word Processor I		12.25
01612 - Word Processor II		13.75
01613 - Word Processor III		15.38
05000 - Automotive Service Occupations		
05005 - Automobile Body Repairer, Fiberglass		13.34
05010 - Automotive Electrician		13.06
05040 - Automotive Glass Installer		12.10
05070 - Automotive Worker		12.10
05110 - Mobile Equipment Servicer		8.59

05130 - Motor Equipment Metal Mechanic	13.06
05160 - Motor Equipment Metal Worker	12.10
05190 - Motor Vehicle Mechanic	13.06
05220 - Motor Vehicle Mechanic Helper	10.12
05250 - Motor Vehicle Upholstery Worker	12.10
05280 - Motor Vehicle Wrecker	12.10
05310 - Painter, Automotive	12.37
05340 - Radiator Repair Specialist	12.10
05370 - Tire Repairer	7.81
05400 - Transmission Repair Specialist	12.10
07000 - Food Preparation And Service Occupations	
07010 - Baker	10.47
07041 - Cook I	9.54
07042 - Cook II	11.78
07070 - Dishwasher	7.25
07130 - Food Service Worker	7.78
07210 - Meat Cutter	11.86
07260 - Waiter/Waitress	7.59
09000 - Furniture Maintenance And Repair Occupations	
09010 - Electrostatic Spray Painter	14.38
09040 - Furniture Handler	8.85
09080 - Furniture Refinisher	14.38
09090 - Furniture Refinisher Helper	10.66
09110 - Furniture Repairer, Minor	12.51
09130 - Upholsterer	14.38
11000 - General Services And Support Occupations	
11030 - Cleaner, Vehicles	8.23
11060 - Elevator Operator	8.23
11090 - Gardener	10.99
11122 - Housekeeping Aide	8.33
11150 - Janitor	8.23
11210 - Laborer, Grounds Maintenance	9.14
11240 - Maid or Houseman	7.25
11260 - Pruner	8.23
11270 - Tractor Operator	10.33
11330 - Trail Maintenance Worker	9.14
11360 - Window Cleaner	9.14
12000 - Health Occupations	
12010 - Ambulance Driver	15.81
12011 - Breath Alcohol Technician	15.81
12012 - Certified Occupational Therapist Assistant	21.70
12015 - Certified Physical Therapist Assistant	21.70
12020 - Dental Assistant	13.20
12025 - Dental Hygienist	29.85
12030 - EKG Technician	23.96
12035 - Electroneurodiagnostic Technologist	23.96
12040 - Emergency Medical Technician	15.81
12071 - Licensed Practical Nurse I	14.14
12072 - Licensed Practical Nurse II	15.81
12073 - Licensed Practical Nurse III	17.63
12100 - Medical Assistant	11.54
12130 - Medical Laboratory Technician	14.14
12160 - Medical Record Clerk	11.82
12190 - Medical Record Technician	13.59
12195 - Medical Transcriptionist	14.14
12210 - Nuclear Medicine Technologist	34.75
12221 - Nursing Assistant I	10.03
12222 - Nursing Assistant II	11.30
12223 - Nursing Assistant III	12.31
12224 - Nursing Assistant IV	13.84
12235 - Optical Dispenser	15.81
12236 - Optical Technician	14.14

12250 - Pharmacy Technician		13.41
12280 - Phlebotomist		13.84
12305 - Radiologic Technologist		22.64
12311 - Registered Nurse I		20.70
12312 - Registered Nurse II		25.32
12313 - Registered Nurse II, Specialist		25.32
12314 - Registered Nurse III		30.64
12315 - Registered Nurse III, Anesthetist		30.64
12316 - Registered Nurse IV		36.72
12317 - Scheduler (Drug and Alcohol Testing)		19.59
13000 - Information And Arts Occupations		
13011 - Exhibits Specialist I		15.06
13012 - Exhibits Specialist II		18.66
13013 - Exhibits Specialist III		22.83
13041 - Illustrator I		15.06
13042 - Illustrator II		18.66
13043 - Illustrator III		22.83
13047 - Librarian		20.66
13050 - Library Aide/Clerk		12.00
13054 - Library Information Technology Systems Administrator		18.66
13058 - Library Technician		15.06
13061 - Media Specialist I		13.46
13062 - Media Specialist II		15.06
13063 - Media Specialist III		16.80
13071 - Photographer I		12.82
13072 - Photographer II		14.32
13073 - Photographer III		17.75
13074 - Photographer IV		21.73
13075 - Photographer V		26.30
13110 - Video Teleconference Technician		12.91
14000 - Information Technology Occupations		
14041 - Computer Operator I		13.65
14042 - Computer Operator II		15.76
14043 - Computer Operator III		17.56
14044 - Computer Operator IV		19.50
14045 - Computer Operator V		21.81
14071 - Computer Programmer I	(see 1)	15.73
14072 - Computer Programmer II	(see 1)	19.50
14073 - Computer Programmer III	(see 1)	23.84
14074 - Computer Programmer IV	(see 1)	
14101 - Computer Systems Analyst I	(see 1)	24.23
14102 - Computer Systems Analyst II	(see 1)	
14103 - Computer Systems Analyst III	(see 1)	
14150 - Peripheral Equipment Operator		13.65
14160 - Personal Computer Support Technician		19.50
15000 - Instructional Occupations		
15010 - Aircrew Training Devices Instructor (Non-Rated)		24.23
15020 - Aircrew Training Devices Instructor (Rated)		29.32
15030 - Air Crew Training Devices Instructor (Pilot)		33.30
15050 - Computer Based Training Specialist / Instructor		24.23
15060 - Educational Technologist		22.82
15070 - Flight Instructor (Pilot)		33.30
15080 - Graphic Artist		20.47
15090 - Technical Instructor		17.65
15095 - Technical Instructor/Course Developer		21.58
15110 - Test Proctor		13.87
15120 - Tutor		13.87
16000 - Laundry, Dry-Cleaning, Pressing And Related Occupations		
16010 - Assembler		8.08
16030 - Counter Attendant		8.08
16040 - Dry Cleaner		9.34
16070 - Finisher, Flatwork, Machine		8.08

16090 - Presser, Hand	8.08
16110 - Presser, Machine, Dry Cleaning	8.08
16130 - Presser, Machine, Shirts	8.08
16160 - Presser, Machine, Wearing Apparel, Laundry	8.08
16190 - Sewing Machine Operator	9.86
16220 - Tailor	10.33
16250 - Washer, Machine	8.46
19000 - Machine Tool Operation And Repair Occupations	
19010 - Machine-Tool Operator (Tool Room)	14.49
19040 - Tool And Die Maker	18.20
21000 - Materials Handling And Packing Occupations	
21020 - Forklift Operator	12.49
21030 - Material Coordinator	18.34
21040 - Material Expediter	18.34
21050 - Material Handling Laborer	10.65
21071 - Order Filler	9.66
21080 - Production Line Worker (Food Processing)	12.49
21110 - Shipping Packer	13.33
21130 - Shipping/Receiving Clerk	13.33
21140 - Store Worker I	13.23
21150 - Stock Clerk	18.58
21210 - Tools And Parts Attendant	12.49
21410 - Warehouse Specialist	12.49
23000 - Mechanics And Maintenance And Repair Occupations	
23010 - Aerospace Structural Welder	20.69
23021 - Aircraft Mechanic I	19.70
23022 - Aircraft Mechanic II	20.69
23023 - Aircraft Mechanic III	21.74
23040 - Aircraft Mechanic Helper	13.70
23050 - Aircraft, Painter	18.50
23060 - Aircraft Servicer	16.09
23080 - Aircraft Worker	17.38
23110 - Appliance Mechanic	14.49
23120 - Bicycle Repairer	9.74
23125 - Cable Splicer	15.43
23130 - Carpenter, Maintenance	13.00
23140 - Carpet Layer	13.55
23160 - Electrician, Maintenance	14.99
23181 - Electronics Technician Maintenance I	14.72
23182 - Electronics Technician Maintenance II	15.05
23183 - Electronics Technician Maintenance III	18.31
23260 - Fabric Worker	12.60
23290 - Fire Alarm System Mechanic	15.43
23310 - Fire Extinguisher Repairer	11.67
23311 - Fuel Distribution System Mechanic	15.43
23312 - Fuel Distribution System Operator	13.01
23370 - General Maintenance Worker	11.95
23380 - Ground Support Equipment Mechanic	19.70
23381 - Ground Support Equipment Servicer	16.09
23382 - Ground Support Equipment Worker	17.38
23391 - Gunsmith I	11.67
23392 - Gunsmith II	13.55
23393 - Gunsmith III	15.43
23410 - Heating, Ventilation And Air-Conditioning Mechanic	15.76
23411 - Heating, Ventilation And Air Conditioning Mechanic (Research Facility)	16.55
23430 - Heavy Equipment Mechanic	15.15
23440 - Heavy Equipment Operator	13.73
23460 - Instrument Mechanic	15.43
23465 - Laboratory/Shelter Mechanic	14.49
23470 - Laborer	10.65
23510 - Locksmith	14.49

23530 - Machinery Maintenance Mechanic	17.38
23550 - Machinist, Maintenance	15.43
23580 - Maintenance Trades Helper	9.92
23591 - Metrology Technician I	15.43
23592 - Metrology Technician II	16.41
23593 - Metrology Technician III	17.37
23640 - Millwright	15.43
23710 - Office Appliance Repairer	14.38
23760 - Painter, Maintenance	13.55
23790 - Pipefitter, Maintenance	15.32
23810 - Plumber, Maintenance	14.38
23820 - Pneudraulic Systems Mechanic	15.43
23850 - Rigger	15.43
23870 - Scale Mechanic	13.55
23890 - Sheet-Metal Worker, Maintenance	15.21
23910 - Small Engine Mechanic	13.55
23931 - Telecommunications Mechanic I	19.01
23932 - Telecommunications Mechanic II	19.76
23950 - Telephone Lineman	18.24
23960 - Welder, Combination, Maintenance	14.66
23965 - Well Driller	15.43
23970 - Woodcraft Worker	15.43
23980 - Woodworker	11.67
24000 - Personal Needs Occupations	
24570 - Child Care Attendant	10.09
24580 - Child Care Center Clerk	12.58
24610 - Chore Aide	12.43
24620 - Family Readiness And Support Services Coordinator	12.44
24630 - Homemaker	16.12
25000 - Plant And System Operations Occupations	
25010 - Boiler Tender	15.43
25040 - Sewage Plant Operator	14.49
25070 - Stationary Engineer	15.43
25190 - Ventilation Equipment Tender	10.73
25210 - Water Treatment Plant Operator	14.49
27000 - Protective Service Occupations	
27004 - Alarm Monitor	10.90
27007 - Baggage Inspector	7.35
27008 - Corrections Officer	12.05
27010 - Court Security Officer	12.05
27030 - Detection Dog Handler	10.90
27040 - Detention Officer	12.05
27070 - Firefighter	12.05
27101 - Guard I	7.37
27102 - Guard II	10.90
27131 - Police Officer I	12.05
27132 - Police Officer II	13.40
28000 - Recreation Occupations	
28041 - Carnival Equipment Operator	9.53
28042 - Carnival Equipment Repairer	10.08
28043 - Carnival Equipment Worker	7.78
28210 - Gate Attendant/Gate Tender	13.18
28310 - Lifeguard	11.01
28350 - Park Attendant (Aide)	14.74
28510 - Recreation Aide/Health Facility Attendant	10.76
28515 - Recreation Specialist	18.26
28630 - Sports Official	11.74
28690 - Swimming Pool Operator	17.71
29000 - Stevedoring/Longshoremen Occupational Services	
29010 - Blocker And Bracer	15.20
29020 - Hatch Tender	15.20

29030 - Line Handler		15.20
29041 - Stevedore I		14.22
29042 - Stevedore II		16.25
30000 - Technical Occupations		
30010 - Air Traffic Control Specialist, Center (HFO)	(see 2)	35.77
30011 - Air Traffic Control Specialist, Station (HFO)	(see 2)	24.66
30012 - Air Traffic Control Specialist, Terminal (HFO)	(see 2)	27.16
30021 - Archeological Technician I		17.49
30022 - Archeological Technician II		19.56
30023 - Archeological Technician III		24.21
30030 - Cartographic Technician		23.18
30040 - Civil Engineering Technician		21.93
30061 - Drafter/CAD Operator I		17.49
30062 - Drafter/CAD Operator II		19.56
30063 - Drafter/CAD Operator III		20.74
30064 - Drafter/CAD Operator IV		24.21
30081 - Engineering Technician I		14.62
30082 - Engineering Technician II		16.41
30083 - Engineering Technician III		18.36
30084 - Engineering Technician IV		22.34
30085 - Engineering Technician V		27.83
30086 - Engineering Technician VI		33.66
30090 - Environmental Technician		21.10
30210 - Laboratory Technician		20.74
30240 - Mathematical Technician		23.34
30361 - Paralegal/Legal Assistant I		19.06
30362 - Paralegal/Legal Assistant II		21.53
30363 - Paralegal/Legal Assistant III		26.35
30364 - Paralegal/Legal Assistant IV		30.80
30390 - Photo-Optics Technician		21.93
30461 - Technical Writer I		22.17
30462 - Technical Writer II		27.10
30463 - Technical Writer III		32.79
30491 - Unexploded Ordnance (UXO) Technician I		22.74
30492 - Unexploded Ordnance (UXO) Technician II		27.51
30493 - Unexploded Ordnance (UXO) Technician III		32.97
30494 - Unexploded (UXO) Safety Escort		22.74
30495 - Unexploded (UXO) Sweep Personnel		22.74
30620 - Weather Observer, Combined Upper Air Or Surface Programs	(see 2)	20.74
30621 - Weather Observer, Senior	(see 2)	23.00
31000 - Transportation/Mobile Equipment Operation Occupations		
31020 - Bus Aide		8.15
31030 - Bus Driver		9.69
31043 - Driver Courier		8.97
31260 - Parking and Lot Attendant		7.25
31290 - Shuttle Bus Driver		9.99
31310 - Taxi Driver		8.21
31361 – Truck Driver, Light		8.97
31362 – Truck Driver, Medium		11.61
31363 – Truck Driver, Heavy		12.48
31364 – Truck Driver, Tractor-Trailer		12.48
99000 - Miscellaneous Occupations		
99030 - Cashier		7.46
99050 - Desk Clerk		9.70
99095 - Embalmer		22.74
99251 - Laboratory Animal Caretaker I		16.24
99252 - Laboratory Animal Caretaker II		17.04
99310 - Mortician		22.74
99410 - Pest Controller		13.28
99510 - Photofinishing Worker		11.95
99710 - Recycling Laborer		10.76

99711 - Recycling Specialist	16.27
99730 - Refuse Collector	10.24
99810 - Sales Clerk	8.95
99820 - School Crossing Guard	15.03
99830 - Survey Party Chief	20.30
99831 - Surveying Aide	11.54
99832 - Surveying Technician	15.00
99840 - Vending Machine Attendant	20.19
99841 - Vending Machine Repairer	23.57
99842 - Vending Machine Repairer Helper	20.19

ALL OCCUPATIONS LISTED ABOVE RECEIVE THE FOLLOWING BENEFITS:

HEALTH & WELFARE: $4.02 per hour or $160.80 per week or $696.79 per month

VACATION: 2 weeks paid vacation after 1 year of service with a contractor or successor; and 4 weeks after 3 years. Length of service includes the whole span of continuous service with the present contractor or successor, wherever employed, and with the predecessor contractors in the performance of similar work at the same Federal facility. (Reg. 29 CFR 4.173)

HOLIDAYS: A minimum of ten paid holidays per year, New Year's Day, Martin Luther King Jr's Birthday, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day, and Christmas Day. (A contractor may substitute for any of the named holidays another day off with pay in accordance with a plan communicated to the employees involved.) (See 29 CFR 4174)

THE OCCUPATIONS WHICH HAVE NUMBERED FOOTNOTES IN PARENTHESES RECEIVE THE FOLLOWING:

1) COMPUTER EMPLOYEES: Under the SCA at section 8(b), this wage determination does not apply to any employee who individually qualifies as a bona fide executive, administrative, or professional employee as defined in 29 C.F.R. Part 541. Because most Computer System Analysts and Computer Programmers who are compensated at a rate not less than $27.63 (or on a salary or fee basis at a rate not less than $455 per week) an hour would likely qualify as exempt computer professionals, (29 C.F.R. 541. 400) wage rates may not be listed on this wage determination for all occupations within those job families. In addition, because this wage determination may not list a wage rate for some or all occupations within those job families if the survey data indicates that the prevailing wage rate for the occupation equals or exceeds $27.63 per hour conformances may be necessary for certain nonexempt employees. For example, if an individual employee is nonexempt but nevertheless performs duties within the scope of one of the Computer Systems Analyst or Computer Programmer occupations for which this wage determination does not specify an SCA wage rate, then the wage rate for that employee must be conformed in accordance with the conformance procedures described in the conformance note included on this wage determination.

Additionally, because job titles vary widely and change quickly in the computer industry, job titles are not determinative of the application of the computer professional exemption. Therefore, the exemption applies only to computer employees who satisfy the compensation requirements and whose primary duty consists of:

(1) The application of systems analysis techniques and procedures, including consulting with users, to determine hardware, software or system functional specifications;

(2) The design, development, documentation, analysis, creation, testing or modification of computer systems or programs, including prototypes, based on and related to user or system design specifications;

(3) The design, documentation, testing, creation or modification of computer programs related to machine operating systems; or

(4) A combination of the aforementioned duties, the performance of which requires the same level of skills. (29 C.F.R. 541.400).

2) AIR TRAFFIC CONTROLLERS AND WEATHER OBSERVERS - NIGHT PAY & SUNDAY PAY: If you work at night as part of a regular tour of duty, you will earn a night differential and receive an additional 10% of basic pay for any hours worked between 6pm and 6am. If you are a full-time employed (40 hours a week) and Sunday is part of your regularly scheduled workweek, you are paid at your rate of basic pay plus a Sunday premium of 25% of your basic rate for each hour of Sunday work which is not overtime (i.e. occasional work on Sunday outside the normal tour of duty is considered overtime work).

HAZARDOUS PAY DIFFERENTIAL: An 8 percent differential is applicable to employees employed in a position that represents a high degree of hazard when working with or in close proximity to ordinance, explosives, and incendiary materials. This includes work such as screening, blending, dying, mixing, and pressing of sensitive ordance, explosives, and pyrotechnic compositions such as lead azide, black powder and photoflash powder. All dry-house activities involving propellants or explosives. Demilitarization, modification, renovation, demolition, and maintenance operations on sensitive ordnance, explosives and incendiary materials. All operations involving regrading and cleaning of artillery ranges.

A 4 percent differential is applicable to employees employed in a position that represents a low degree of hazard when working with, or in close proximity to ordance, (or employees possibly adjacent to) explosives and incendiary materials which involves potential injury such as laceration of hands, face, or arms of the employee engaged in the operation, irritation of the skin, minor burns and the like; minimal damage to immediate or adjacent work area or equipment being used. All operations involving, unloading, storage, and hauling of ordance, explosive, and incendiary ordnance material other than small arms ammunition. These differentials are only applicable to work that has been specifically designated by the agency for ordance, explosives, and incendiary material differential pay.

** UNIFORM ALLOWANCE **

If employees are required to wear uniforms in the performance of this contract (either by the terms of the Government contract, by the employer, by the state or local law, etc.), the cost of furnishing such uniforms and maintaining (by laundering or dry cleaning) such uniforms is an expense that may not be borne by an employee where such cost reduces the hourly rate below that required by the wage determination. The Department of Labor will accept payment in accordance with the following standards as compliance:

The contractor or subcontractor is required to furnish all employees with an adequate number of uniforms without cost or to reimburse employees for the actual cost of the uniforms. In addition, where uniform cleaning and maintenance is made the responsibility of the employee, all contractors and subcontractors subject to this wage determination shall (in the absence of a bona fide collective bargaining agreement providing for a different amount, or the furnishing of contrary affirmative proof as to the actual cost), reimburse all employees for such cleaning and maintenance at a rate of $3.35 per week (or $.67 cents per day). However, in those instances where the uniforms furnished are made of "wash and wear" materials, may be routinely washed and dried with other personal garments, and do not require any special treatment such as dry cleaning, daily washing, or commercial laundering in order to meet the cleanliness or appearance standards set by the terms of the Government contract, by the contractor, by law, or by the nature of the work, there is no requirement that employees be reimbursed for uniform maintenance costs.

The duties of employees under job titles listed are those described in the "Service Contract Act Directory of Occupations", Fifth Edition, April 2006, unless otherwise indicated. Copies of the Directory are available on the Internet. A links to the Directory may be found on the WHD home page at http://www.dol. gov/esa/whd/ or through the Wage Determinations On-Line (WDOL) Web site at http://wdol.gov/.

REQUEST FOR AUTHORIZATION OF ADDITIONAL CLASSIFICATION AND WAGE RATE {Standard Form 1444 (SF 1444)}

Conformance Process:

The contracting officer shall require that any class of service employee which is not listed herein and which is to be employed under the contract (i.e., the work to be performed is not performed by any classification listed in the wage determination), be classified by the contractor so as to provide a reasonable relationship (i.e., appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination. Such conformed classes of employees shall be paid the monetary wages and furnished the fringe benefits as are determined. Such conforming process shall be initiated by the contractor prior to the performance of contract work by such unlisted class(es) of employees. The conformed classification, wage rate, and/or fringe benefits shall be retroactive to the commencement date of the contract. {See Section 4.6 (C)(vi)} When multiple wage determinations are included in a contract, a separate SF 1444 should be prepared for each wage determination to which a class(es) is to be conformed.

The process for preparing a conformance request is as follows:

1) When preparing the bid, the contractor identifies the need for a conformed occupation(s) and computes a proposed rate(s).

2) After contract award, the contractor prepares a written report listing in order proposed classification title(s), a Federal grade equivalency (FGE) for each proposed classification(s), job description(s), and rationale for proposed wage rate(s), including information regarding the agreement or disagreement of the authorized representative of the employees involved, or where there is no authorized representative, the employees themselves. This report should be submitted to the contracting officer no later than 30 days after such unlisted class(es) of employees performs any contract work.

3) The contracting officer reviews the proposed action and promptly submits a report of the action, together with the agency's recommendations and pertinent information including the position of the contractor and the employees, to the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, for review. (See section 4.6(b)(2) of Regulations 29 CFR Part 4).

4) Within 30 days of receipt, the Wage and Hour Division approves, modifies, or disapproves the action via transmittal to the agency contracting officer, or notifies the contracting officer that additional time will be required to process the request.

5) The contracting officer transmits the Wage and Hour decision to the contractor.

6) The contractor informs the affected employees.

Information required by the Regulations must be submitted on SF 1444 or bond paper.

When preparing a conformance request, the "Service Contract Act Directory of Occupations" (the Directory) should be used to compare job definitions to insure that duties requested are not performed by a classification already listed in the wage determination. Remember, it is not the job title, but the required tasks that determine whether a class is included in an established wage determination. Conformances may not be used to artificially split, combine, or subdivide classifications listed in the wage determination.

AFFIDAVIT re NON-COLLUSION

CITY IN _____)
) ss.
ISLAND OF GUAM)

_____[*state name of affiant signing below*], being first duly sworn, deposes and says that:

1. The name of the offering company or individual is [*state name of company*] _____.

2. The proposal for the solicitation identified above is genuine and not collusive or a sham. The offeror has not colluded, conspired, connived or agreed, directly or indirectly, with any other offeror or person, to put in a sham proposal or to refrain from making an offer. The offeror has not in any manner, directly or indirectly, sought by an agreement or collusion, or communication or conference, with any person to fix the proposal price of offeror or of any other offeror, or to fix any overhead, profit or cost element of said proposal price, or of that of any other offeror, or to secure any advantage against the government of Guam or any other offeror, or to secure any advantage against the government of Guam or any person interested in the proposed contract. All statements in this affidavit and in the proposal are true to the best of the knowledge of the undersigned. This statement is made pursuant to 2 GAR Division 4 § 3126(b).

3. I make this statement on behalf of myself as a representative of the offeror, and on behalf of the offeror's officers, representatives, agents, subcontractors, and employees.

_____
Signature of one of the following:
Offeror, if the offeror is an individual;
Partner, if the offeror is a partnership;
Officer, if the offeror is a corporation.

Subscribed and sworn to before me

this _____ day of _____, 201__.

_____
NOTARY PUBLIC
My commission expires _____, _____.

THIS AFFIDAVIT MUST BE SUBMITTED IN THE ENVELOPE LABELED "TECHNICAL BID".

AFFIDAVIT DISCLOSING OWNERSHIP and COMMISSION

CITY IN _____)
) ss.
ISLAND OF GUAM)

A. I, the undersigned, being first duly sworn, depose and say that I am an authorized representative of the offeror and that [please check only one]:

[ ] The offeror is an individual or sole proprietor and owns the entire (100%) interest in the offering business.

[ ] The offeror is a corporation, partnership, joint venture, or association known as _____[please state name of offeror company], and the persons, companies, partners, or joint venturers who have held more than 10% of the shares of interest in the offering business during the 365 days immediately preceding the submission date of the proposal are as follows [if none, please so state]

Name	Address	% of Interest
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

B. Further, I say that the persons who have received or are entitled to receive a commission, gratuity or other compensation for procuring or assisting in obtaining business related to the bid or proposal for which this affidavit is submitted are as follows [if none, please so state]:

Name	Address	Compensation
_____	_____	_____

C. If the ownership of the offering business should change between the time this affidavit is made and the time an award is made or a contract is entered into, then I promise personally to update the disclosure required by 5 GCA §5233 by delivering another affidavit to the government.

_____
Signature of one of the following:
Offeror, if the offeror is an individual;
Partner, if the offeror is a partnership;
Officer, if the offeror is a corporation.

Subscribed and sworn to before me
this ____ day of _____, 201__.

_____
NOTARY PUBLIC
My commission expires_____

THIS AFFIDAVIT MUST BE SUBMITTED IN THE ENVELOPE LABELED "TECHNICAL BID".

AFFIDAVIT re CONTINGENT FEES

CITY IN _____)
) ss.
ISLAND OF GUAM)

_____[state name of affiant signing below], being first sworn, deposes and says that:

1. The name of the offering company or individual is [state name of company]

_____

2. As a part of the offering company's bid or proposal, to the best of my knowledge, the offering company has not retained any person or agency on a percentage, commission, or other contingent arrangement to secure this contract. This statement is made pursuant to 2 GAR Division 4 § 11108(f).

3. As a part of the offering company's bid or proposal, to the best of my knowledge, the offering company has not retained a person to solicit or secure a contract with the government of Guam upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, except for retention of bona fide employees or bona fide established commercial selling agencies for the purpose of securing business. This statement is made pursuant to 2 GAR Division 4 § 11108(h).

4. I make these statements on behalf of myself as a representative of the offeror, and on behalf of the offerors officers, representatives, agents, subcontractors, and employees.

_____
Signature of one of the following:
Offeror, if the offeror is an individual;
Partner, if the offeror is a partnership;
Officer, if the offeror is a corporation.

Subscribed and sworn to before me
this ____ day of _____, 201__

_____
NOTARY PUBLIC
My commission expires_____

THIS AFFIDAVIT MUST BE SUBMITTED IN THE ENVELOPE LABELED "TECHNICAL BID".

GOVERNMENT OF GUAM

GENERAL SERVICES AGENCY
148 Route 1, Marine Corp. Drive
Piti, Guam 96915

BID BOND
NO. _____

KNOW ALL MEN BY THESE PRESENTS that _____, as Principal hereinafter called the Principal, and (Bonding Company), _____ A duly admitted insurer under the laws of the Territory of Guam, as Surety, hereinafter called the Surety are Held firmly bound unto the Territory of Guam for the sum of _____ _____ Dollars ($_____), for Payment of which sum will and truly to be made, the said Principal and the said Surety bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for (identify project by number and brief description)

_____

NOW, THEREFORE, if the Territory of Guam shall accept the bid of the Principal and the Principal shall enter into a Contract with the Territory of Guam in accordance with the terms of such bid, and give such bond or bonds as may be specified in bidding or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such Contract and give such bond or bonds, if the Principal shall pay to the Territory of Guam the difference not to exceed the penalty hereof between the amounts specified in said bid and such larger amount for which the Territory of Guam may in good faith contract with another party to perform work covered by said bid or an appropriate liquidated amount as specified in the Invitation for Bids then this obligation shall be null and void, otherwise to remain full force and effect.

Signed and sealed this _____day of _____ 2014

_____
(PRINCIPAL) (SEAL)

_____
(WITNESS)

_____
(TITLE)

_____ _____
(MAJOR OFFICER OF SURETY) (MAJOR OFFICER OF SURETY)

_____ _____
(TITLE) (TITLE)

_____
(RESIDENT GENERAL AGENT)

BID BOND MUST BE COMPLETED AND SUBMITTED IN THE ENVELOPE LABELED "BID COST"

DOA 113/Rev: 4-1-87

INSTRUCTION TO PROVIDERS:

NOTICE to all Insurance and Bonding Institutions:

The Bond requires the signatures of the Vendor, two (2) major Officers of the Surety and Resident General Agent, if the Surety is a foreign or alien surety.

When the form is submitted to General Services Agency, it should be accompanied with copies of The following:

1. Current Certificate of Authority to do business on Guam issued by the Department of Revenue and Taxation.

2. Power of Attorney issued by the Surety to the Resident General Agent.

3. Power of Attorney issued by two (2) major officers of the Surety to whoever is signing on their behalf.

Bonds, submitted as Bid Guarantee, without signatures and supporting documents are invalid and Bids will be rejected.

GOVERNMENT OF GUAM
GENERAL TERMS AND CONDITIONS

SEALED BID SOLICITATION AND AWARD

Only those Boxes checked below are applicable to this bid.

[X] 1. **AUTHORITY:** This solicitation is issued subject to all the provision of the Guam Procurement Act (5GCA, Chapter 5) and the Guam Procurement Regulations (copies of both are available at the Office of the Complier of laws, Department of Law, copies available for inspection at General Services Agency). It requires all parties involved in the Preparation, negotiation, performance, or administration of contracts to act in good faith.

[X] 2. **GENERAL INTENTION**: Unless otherwise specified, it is the declared and acknowledged intention and meaning of these General Terms and conditions for the bidder to provide the Government of Guam (Government) with specified services or with materials, supplies or equipment completely assembled and ready for use.

[X] 3. **TAXES**: Bidders are cautioned that they are subject to Guam Income Taxes as well as all other taxes on Guam Transactions. Specific information on taxes may be obtained from the Director of Revenue and Taxation.

[X] 4. **LICENSING**: Bidders are cautioned that the Government will not consider for award any offer submitted by a bidder who has not complied with the Guam Licensing Law. Specific information on licenses may be obtained from the Director of Revenue and Taxation.

[X] 5. **LOCAL PROCUREMENT PREFERENCE**: All procurement of supplies and services where possible, will be made from among businesses licensed to do business on Guam in accordance with section 5008 of the Guam Procurement Act (5GCA, Chapter 5) and Section 1-104 of the Guam Procurement Regulations.

[X] 6. **COMPLIANCE WITH SPECIFICATIONS AND OTHER SOLICITATION REQUIREMENTS**: Bidders shall comply with all specifications and other requirements of the Solicitation.

[X] 7. **"ALL OR NONE" BIDS**: NOTE: By checking this item, the Government is requesting all of the bid items to be bided or none at all. **The Government will not award on an itemized basis**.

[X] 8. **INDEPENDENT PRICE DETERMINATION**: The bidder, upon signing the Invitation for Bid, certifies that the prices in his bid were derived at without collusion, and acknowledge that collusion and anti-competitive practices are prohibited by law. Violations will be subject to the provision of Section 5651 of that of the Guam Procurement Act. Other existing civil, criminal or administrative remedies are not impaired and may be in addition to the remedies in Section 5651 of the Government code.

[X] 9. **BIDDER'S PRICE**: The Government will consider not more than two (2) (Basic and Alternate) item prices and the bidder shall explain fully each price if supplies, materials, equipment, and/or specified services offered comply with specifications and the products origin. Where basic or alternate bid meets the minimum required specification, cost and other factors will be considered. Failure to explain the difference between the basic and alternate bid will result in rejection of the bid.

[X] 10. **BID ENVELOPE**: Envelope shall be sealed and marked with the bidder's name, Bid number, time, date and place of Bid Opening.

[X] 11. **BID GUARANTEE REQUIREMENT**: Bidder is required to submit a Bid Guarantee Bond or standby irrevocable Letter of Credit or Certified Check or Cashier's Check in the same bid envelope to be held by the Government pending award. The Bid Guarantee Bond, Letter of Credit, Certified Check or Cashier's Check must be issued by any local surety or banking institution licensed to do business on Guam and made payable to the Treasure of Guam in the amount of fifteen percent (15%) of his highest total bid offer. The Bid Bond must be submitted on Government Standard Form BB-1 (copy enclosed). Personal Checks will not be accepted as Bid Guarantee. If a successful Bidder (contractor) withdraws from the bid or fails to enter into contract within the prescribed time, such Bid guarantee will be forfeited to the Government of Guam. Bids will be disqualified if not accompanied by Bid Bond, Letter of Credit, Certified Check or Cashier's check. Bidder must include in his/her bid, valid copies of a Power of Attorney from the Surety and a Certificate of Authority from the Government of Guam to show proof that the surety company named on the bond instrument is authorized by the Government of Guam and qualified to do business on Guam. For detailed information on bonding matters, contact the Department of Revenue and Taxation. Failure to submit a valid Power of Attorney and Certificate of Authority on the surety is cause for rejection of bid. **Pursuant to 5 GCA § 5212, all competitive sealed bidding for the procurement of supplies or services exceeding $25,000.00 a 15% Bid Security of the total bid price must accompany the bid package. The bid bond, Letter of Credit, Certified Check or Cashier's Check will serve as Bid Security for this procurement.**

[X] 12. **PERFORMANCE GUARANTEE**: Bidders who are awarded a contract under this solicitation, guarantee that goods will be delivered or required services performed within the time specified. Failure to perform the contract in a satisfactory manner may be cause for suspension or debarment from doing business with the Government of Guam. In addition, the Government will hold the Vendor liable and will enforce the requirements as set forth in Section 40 of these General Terms and Conditions.

[X] 13. **SURETY BONDS**: Bid and Bid Bonds coverage must be signed or countersigned in Guam by a foreign or alien surety's resident general agent. The surety must be an Insurance Company, authorized by the government of Guam and qualified to do business in Guam. Bids will be disqualified if the Surety Company does not have a valid Certificate of Authority from the Government of Guam to conduct business in Guam.

[X] 14. **COMPETENCY OF BIDDERS**: Bids will be considered only from the such bidders who, in the opinion of the Government, can show evidence of their ability, experience, equipment, and facilities to render satisfactory service.

[X] 15. **DETERMINATION OF RESPONSIBILITY OF BIDDERS**: The Chief Procurement Officer reserves the right for securing from bidders information to determine whether or not they are responsible and to inspect plant site, place of business; and supplies and services as necessary to determine their responsibility in accordance with Section 15 of these General Terms and Conditions. (2 GAR, Div. 4 § 3116). The government has the right to reject non-responsible bidders including for failure to respond to inquiries related to responsibility.

[X] 16. **STANDARD FOR DETERMINATION OF LOWEST RESPONSIBLE BIDDER**:
In determining the lowest responsible offer, the Chief Procurement Officer shall be guided by the following:

a) Price of items offered.
b) The ability, capacity, and skill of the Bidder to perform.
c) Whether the Bidder can perform promptly or within the specified time.
d) The quality of performance of the Bidder with regards to awards previously made to him.
e) The previous and existing compliance by the Bidder with laws and regulations relative to procurement.
f) The sufficiency of the financial resources and ability of the Bidder to perform.
g) The ability of the bidder to provide future maintenance and services for the subject of the award.
h) The compliance with all of the conditions to the Solicitation.

[X] 17. **TIE BIDS**: If the bids are for the same unit price or total amount in the whole or in part, the Chief Procurement Officer will determine award based on 2 GAR, Div. 4, § 3109(o) (2).

[ ] 18. **BRAND NAMES**: Any reference in the Solicitation to manufacturer's Brand Names and number is due to lack of a satisfactory specification of commodity description. Such preference is intended to be descriptive, but not restrictive and for the sole purpose of indicating prospective bidders a description of the article or services that will be satisfactory. Bids on comparable items will be considered provided the bidder clearly states in his bid the exact articles he is offering and how it differs from the original specification.

[X] 19. **DESCRIPTIVE LITERATURE**: Descriptive literature(s) as specified in this solicitation must be furnished as a part of the bid and must be received at the date and time set for opening Bids. The literature furnished must clearly identify the item(s) in the Bid. The descriptive literature is required to establish, for the purpose of evaluation and award, details of the product(s) the bidder proposes to furnish including design, materials, components, performance characteristics, methods of manufacture, construction, assembly or other characteristics which are considered appropriate. Rejection of the Bid will be required if the descriptive literature(s) do not show that the product(s) offered conform(s) to the specifications and other requirements of this solicitation. Failure to furnish the descriptive literature(s) by the time specified in the Solicitation will require rejection of the bid.

[ ] 20. **SAMPLES**: Sample(s) of item(s) as specified in this solicitation must be furnished as a part of the bid and must be received at the date and time set for opening Bids. The sample(s) should represent exactly what the bidder proposes to furnish and will be used to determine if the item(s) offered complies with the specifications. Rejection of the Bid will be required if the sample(s) do not show that the product(s) offered conform(s) to the specifications and other requirements of this solicitation. Failure to furnish the sample(s) by the time specified in the Solicitation will require rejection of the Bid.

[ ] 21. **LABORATORY TEST**: Successful bidder is required to accompany delivery of his goods with a Laboratory Test Report indicating that the product he is furnishing the Government meets with the specifications. This report is on the bidder's account and must be from a certified Testing Association.

[X] 22. **AWARD, CANCELLATION, & REJECTION**: Award shall be made to the lowest responsible and responsive bidder, whose bid is determined to be the most advantageous to the Government, taking into consideration the evaluation factors set forth in this solicitation. No other factors or criteria shall be used in the evaluation. The right is reserved as the interest of the Government may require to waive any minor irregularity in bid received. The Chief Procurement Officer shall have the authority to award, cancel, or reject bids, in whole or in part for any one or more items if he determines it is in the public interest. Award issued to the lowest responsible bidder within the specified time for acceptance as indicated in the solicitation, results in a bidding contract without further action by either party. In case of a error in the extension of prices, unit price will govern. It is the policy of the Government to award contracts to qualified local bidders. The Government reserves the right to increase or decrease the quantity of the items for award and make additional awards for the same type items and the vendor agrees to such modifications and additional awards based on the bid prices for a period of thirty (30) days after original award. No. award shall be made under this solicitation which shall require advance payment or irrevocable letter of credit from the government (2 GAR, Div.4 §1103).

[ ] 23. **MARKING:** Each outside container shall be marked with the Purchase Order number, item number, brief item description and quantity. Letter marking shall not be less than 3/4" in height.

[X] 24. **SCHEDULE FOR DELIVERY**: Successful bidder shall notify the General Services Agency, Telephone Nos. 475-1707 or 475-713, at least twenty-four (24) hours before delivery of any item under this solicitation.

[ ] 25. **BILL OF SALE**: Successful supplier shall render Bills of Sale for each item delivered under this contract. Failure to comply with this requirement will result in rejection of delivery. The Bill of Sale must accompany the items delivered but will not be considered as an invoice for payment. Supplier shall bill the Government in accordance with billing instructions as indicated on the Purchase Order.

[ ] 26. **MANUFACTURER'S CERTIFICATE**: Successful bidder is required, upon delivery of any item under this contract, to furnish a certificate from the manufacturer indication that the goods meet the specifications. Failure to comply with this request will result in rejection of delivery payment. Supplier shall bill the Government in accordance with billing instructions as indicated on the Purchase Order.

[X] 27. **INSPECTION**: All supplies, materials, equipment, or services delivered under this contract shall be subject to the inspection and/or test conducted by the Government at destination. If in any case the supplies, materials, equipment, or services are found to be defective in material, workmanship, performance, or otherwise do not conform with the specifications, the Government shall have the right to reject the items or require that they be corrected. The number of days required for correction will be determined by the Government.

[ ] 28. **MOTOR VEHICLE SAFETY REQUIREMENTS**: The Government will only consider Bids on motor vehicles which comply with the requirements of the National Traffic and Motor Vehicle safety Act of 1966 (Public Law 89-563) and Clean Air Act as amended (Public Law 88-206), that are applicable to Guam. Bidders shall state if the equipment offered comply with these aforementioned Federal Laws.

[ ] 29. **SAFETY INSPECTION**: All motor vehicles delivered under this contract must pass the Government of Guam Vehicle Inspection before delivery at destination.

[ ] 30. **GUARANTEE**:

a) Guarantee of Vehicle Type of Equipment:

The successful bidder shall guarantee vehicular type of equipment offered against defective parts, workmanship, and performance, for a period of not less than one (1) year after date of receipt of equipment. Bidder shall also provide service to the equipment for at least one (1) year. Service to be provided shall include, but will not be limited to tune ups (change of spark plugs, contact points and condensers) and lubrication (change of engine and transmission oil). All parts and labor shall be at the expense of the bidder. All parts found defective and not caused by misuse, negligence or accident within the guarantee period shall be repaired, replaced, or adjusted within six (6) working days after notice from the Government and without cost to the Government. Vehicular type of equipment as used in this context shall include equipment used for transportation as differentiated from tractors, backhoes, etc.

b) Guarantee of Other Type of Equipment:

The successful bidder shall guarantee all other types of equipment offered, except those mentioned in 30a, above, against defective parts, workmanship, and performance for a period of not less than three (3) months after date of receipt of equipment. Bidder shall also provide service to the equipment for at least three (3) months. All parts found defective within that period shall be repaired or replaced by the Contractor without cost to the Government. Repairs, adjustments or replacements of defective parts shall be completed by the contractor within six (6) working days after notice from the Government.

(c) Compliance with this Section is a condition of this Bid.

[X] 31. **REPRESENTATION REGARDING ETHICS IN PUBLIC PROCUREMENT**: The bidder or contractor represents that it has not knowingly influenced and promises that it will not knowingly influence a Government employee to breach any of the ethical standards and represents that it has not violated, is not violating, and promises that it will not violate the prohibition against gratuities and kickbacks set forth on Chapter 11 (Ethics in Public Contracting) of the Guam Procurement Act and in Chapter 11 of the Guam Procurement Regulations.

[X] 32. **REPRESENTATION REGARDING CONTINGENT FEES**: The contractor represents that it has not retained a person to solicit or secure a Government contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, except for retention of bona fide employees or bona fide established commercial selling agencies for the purpose of securing business (2 GAR Div 4 Chapter 11 Section 11-4.6.

[X] 33. **EQUAL EMPLOYMENT OPPORTUNITY**: Contractors shall not discriminate against any employee or applicant of employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that employees are treated equally during employment without regards to their race, color, religion, sex, or national origin.

[X] 34. **COMPLIANCE WITH LAWS**: Bidders awarded a contract under this Solicitation shall comply with the applicable standard, provisions, and stipulations of all pertinent Federal and/or local laws, rules, and regulations relative to the performance of this contract and the furnishing of goods.

[X] 35. **CHANGE ORDER**: Any order issued relative to awards made under this solicitation will be subject to and in accordance with the provisions of 2 GAR Div 4 Section 6101(3)(a)(1).

[X] 36. **STOP WORK ORDER**: Any stop work order issued relative to awards made under this solicitation will be subject to and in accordance with the provisions of 2 GAR Div 4 Section 6101(4).

[X] 37. **TERMINATION FOR CONVENIENCE**: Any termination order for the convenience of the Government issued relative to wards made under this solicitation will be subject to and in accordance with the provisions of 2 GAR Div 4 Section 6101(10).

[X] 38. **TIME FOR COMPLETION**: It is hereby understood and mutually agreed by and between the contractor and the Government that the time for delivery to final destination or the timely performance of certain services is an essential condition of this contract. If the contractor refuses or fails to perform any of the provisions of this contract within the time specified in the Purchase Order (from the date Purchase Order is acknowledged by vendor), then the contractor is in default. Defaults will be treated subject to and in accordance with the provisions of 2 GAR, Div. 4 § 6101(8)(a).

[X] 39. **EXCUSE FOR NON-PERFORMANCE OR DELAYED PERFORMANCE**: Bidders who are awarded contracts under this Solicitation, guarantee that the goods will be delivered to their destination or required services rendered within the time specified. If the bidder is not able to meet the specified delivery date, he is required to notify the Chief Procurement Officer of such delay. Notification shall be in writing and shall be receive by the Chief Procurement Officer at least twenty-four (24) hours before the specified delivery date. Notification of delay shall include an explanation of the causes and reasons for the delay including statement(s) from supplier or shipping company causing the delay. The Government reserves the right to reject delay justification if, in the opinion of the Chief Procurement Officer, such justification is not adequate. 2 GAR Div 4 Section 6101 (8)(d).

[X] 40. **LIQUIDATED DAMAGES**: When the contractor is given notice of delay or nonperformance as specified in Paragraph 1 (Default) of the Termination for Default Clause of this contract and fails to cure in the time specified, the contractor shall be liable for damages for delay in the amount of one-fourth of one percent (1%) of outstanding order per calendar day from date set for cure until either the territory reasonable obtains similar supplies or services if the contractor is terminated for default, or until the contractor provides the supplies or services if the contractor is not terminated for default. To the extent that the contractor's delay or nonperformance is excused under Paragraph 40 (Excuse for Nonperformance or Delayed Performance) of the Termination for Default Clause of this contract, liquidated damages shall not be due the territory. The contractor remains liable for damages caused other than by delay. 2 GAR, Div. 4 §6101(9) (a).

[X] 41. **PHYSICAL LIABILITY**: If it becomes necessary for the Vendor, either as principal, agent or employee, to enter upon the premises or property of the Government of Guam in order to construct, erect, inspect, make delivery or remove property hereunder, the Vendor hereby covenants and agrees to take, use, provide and make all proper, necessary and sufficient precautions, safeguards and protections against the occurrence of any accidents, injuries or damages to any person or property during the progress of the work herein covered, and to be responsible for, and to indemnify and save harmless the Government of Guam from the payment of all sums of money by reason of all or any such accidents, injuries or damages that may occur upon or about such work, and fines, penalties and loss incurred for or by reasons of the violations of any territorial ordinance, regulations, or the laws of Guam or the United States, while the work is in progress. Contractor will carry insurance to indemnify the Government of Guam against any claim for loss, damage or injury to property or persons arising out of the performance of the Contractor or his employees and agents of the services covered by the contract and the use, misuse or failure of any equipment used by the contractor or his employees or agents, and shall provide certificates of such insurance to the Government of Guam when required.

[X] 42. Contract will be cancelled if funds not appropriated or insufficient, and that government will timely inform contractor. R 3121(e)(1)(C) and R 3121(e)(1)(D)

[X] 43. If cancelled, contractor will be reimbursed unamortized reasonably incurred non-recurring costs. R 3121(e)(1)(G)

[X] 44. **CONTACT FOR CONTRACT ADMINISTRATION**: If your firm receives a contract as a result of this Solicitation, please designate a person whom we may contact for prompt administration.

Name: _____ Title: _____

Address: _____ Telephone: _____

_____

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GOVERNMENT OF GUAM

SEALED BID SOLICITAITON INSTRUCTIONS

1. BID FORMS: Each bidder shall be provided with one (1) set of Solicitation package. Additional copies may be provided upon request. Bidders requesting additional copies of said solicitation package will be charged per page in accordance with 5 GCA § 10203 of the Government Code of Guam. All payments for this purpose shall be by cash, certified check or money order and shall be made payable to the General Services Agency (EO 86-24).

2. PREPARATIONS OF BIDS:
   a) Bidders are required to examine the drawings, specifications, schedule, and all instructions. Failure to do so will be at bidder's risk.

   b) Each bidder shall furnish the information required by the Solicitation. The bidder shall sign the solicitation and print or type his name on the bid form on page 3 "Instruction to Bidder". Erasures or other changes must be initialed by the person signing the bid. Bids signed by an agent are to be accompanied by evidence of this authority unless such evidence has been previously furnished to the issuing office.

   c) Unit price for each unit offered shall be shown and such price shall include packing unless otherwise specified. A total shall be entered in the amount column for each item offered . In case of discrepancies between a unit price and extended price, the unit price will be presumed to be correct.

   d) Bids for supplies or services other than those specified will not be considered.
   Time, if stated as a number of days, means calendar days and will include Saturdays, Sundays, and holidays beginning the day after the issuance of a Notice to Proceed. Time stated ending on a Saturday, Sunday or Government of Guam legal holiday will end at the close of the next business day.

3. EXPLANATION TO BIDDERS: Any explanation desired by a bidder regarding the meaning or interpretation of the Solicitation, drawings, specifications, etc., must be submitted in writing and with sufficient time allowed for a written reply to reach all bidders before the submission of their bids. Oral explanations or instructions given before the award of the contract will not be binding. Any information given to a prospective bidder concerning a Solicitation will be furnished to all prospective bidders in writing as an amendment to the Solicitation if such information would be prejudicial to uninformed bidders.

4. ACKNOWLEDGEMENT OF AMENDMENTS TO SOLICITATIONS: Receipt of an amendment to a Solicitation by a bidder must be acknowledged by signing an acknowledgement of receipt of the amendment. Such acknowledgement must be received prior to the hour and date specified for receipt of bids.

5. SUBMISSION OF BIDS:
   a) Bids and modifications thereof shall be enclosed in sealed envelopes and addressed to the office specified in the Solicitation. The bidder shall show the hour and date specified in the Solicitation for receipt, the Solicitation number, and the name and address of the bidder on the face of the envelope.

   b) Telegraphic bids will not be considered unless authorized by the Solicitation. However, bids may be modified or withdrawn by written or telegraphic notice, provided such notice is received prior to the hour and date specified for receipt (see paragraph 6 of these instructions).

   c) Samples of items, when required, must be submitted within the time specified, unless otherwise specified by the Government, at no expense to the Government. If not destroyed by testing, samples will be returned at bidder's request and expense, unless otherwise specified by the Solicitation.

   d) Samples or descriptive literature should not be submitted unless it is required on this solicitation. Regardless of any attempt by a bidder to condition the bid, unsolicited samples or descriptive literature will not be examined or tested at the bidder's risk, and will not be deemed to vary any of the provisions of this Solicitation.

6. FAILURE TO SUBMIT BID: If no bid is to be submitted, do not return the solicitation unless otherwise specified. A letter or postcard shall be sent to the issuing office advising whether future Solicitations for the type of supplies or services covered by this Solicitation are desired.

7. LATE BID, LATE WITHDRAWALS, AND LATE MODIFICATIONS:
   a) Definition: Any bid received after the time and date set for receipt of bids is late. Any withdrawal or modification of a bid received after the time and date set for opening of bids at the place designated for opening is late (Guam Procurement Regulations 2 GAR, Div.4 §3109(k)).

   b) Treatment: No late bid, late modification, or late withdrawal will be considered unless received before contract award, and the bid, modification, or withdrawal would have been timely but for the action or inaction of territorial personnel directly serving the procurement activity.

8. DISCOUNTS:
   a) Notwithstanding the fact that prompt payment discounts may be offered, such offer will not be considered in evaluating bids for award unless otherwise specified in the Solicitation. However, offered discounts will be taken if payment is made within the discount period, even though not considered in the evaluation of bids.

   b) In connection with any discount offered, time will be computed from date of delivery and acceptance of the supplies to the destination as indicated in the purchase order or contract. Payment is deemed to be made for the purpose of earning the discount on the date of mailing of the Government check.

9. GOVERNMENT FURNISHED PROPERTY: No material, labor or facilities will be furnished by the Government unless otherwise provided for in the Solicitation.

10. SELLER' INVOICES: Invoices shall be prepared and submitted in quadruplicate (one copy shall be marked "original") unless otherwise specified. Invoices shall be "certified true and correct" and shall contain the following information: Contract and order number (if any), item numbers, description of supplies or services, sizes, quantities, unit prices, and extended total. Bill of lading number and weight of shipment will be shown for shipments made on Government bills of lading. Invoices shall be submitted to GDOE upon acceptance of completion and installation of project by GDOE for concurrence and processing of invoices.

11. RECEIPT, OPENING AND RECORDING OF BIDS: Bids and modifications shall be publicly opened in the presence of one or more witnesses, at the time, date, and place designated in the Invitation for Bids. The name of each bidder, the bid price, and such other information as is deemed appropriate by the Procurement Officer, shall be read aloud and recorded, or otherwise made available. The names and addresses of required witnesses shall be recorded at the opening. The opened bids shall be available for public inspection except to the extent the bidder designates trade secrets or other proprietary data to be confidential as set forth in accordance with Section 12, below. Material so designated shall accompany the bid and shall be readily separable from the bid in order to facilitate public inspection of the non-confidential portion of the bid. Prices, makes and models or catalogue numbers of the items offered, deliveries, and terms of payment shall be publicly available at the time of bid opening regardless of any designation to the contrary (Guam Procurement Regulations 2 GAR, Div.4 §3109(k)).

    Multi-Step Sealed Bidding: Phase I - Technical Bid Envelope shall not be publicly opened. Phase II – Price Bid Envelope shall be opened publicly. Bidders deemed "Acceptable" shall be invited to attend the Price Bid opening. Phase II of the Multi-Step Sealed Bidding process is treated as 2 GAR Div.4 §3109 Competitive Sealed Bid.

12. CONFIDENTIAL DATA: The Procurement Officer shall examine the bids to determine the validity of any requests for nondisclosure of trade secrets and other proprietary data. If the Bidder does not agree with designation of proprietary information disputes will be decided pursuant to 2 GAR Div 4 3109(v)(2)

ADDITIONAL CONTRACTUAL CONDITIONS

The purchase order together with the IFB Solicitation Package incorporates the Multi-Step Invitation for Bid No. GSA_____ will be the contractual agreement.

1. **Final Payment and Release of Claims**. Final payment shall be made upon satisfactory delivery and acceptance of all products and services as herein specified and performed under the contract. Prior to final payment; and as a condition precedent thereto, the Bidder shall execute and deliver to the General Services Agency (GSA) and Guam Department of Education (GDOE), a release in a form approved by the GSA and GDOE of claims against GSA arising under and by virtue of the contract.

2. **Written Notice of Claims**. All written notice of claims shall be governed by the Guam Procurement Regulations, as set forth in Title 2 Guam Administrative Rules and Regulations, and/or as set forth by Guam law.

3. **Responsibility of the Bidder**. The Bidder shall be responsible for the professional and technical accuracy of all work and materials furnished under the Contract. Bidder shall, without additional cost to GSA and GDOE, correct or revise all errors or deficiencies in its work identified during the term of the Contract, and as set forth in the Invitation for Multi-Step Bid No. _____

The GSA and GDOE review, approval, acceptance of, and payment of fees for services required under the Contract, shall not be construed to operate as a waiver of any rights under the Contract or of any cause of action arising out of the Bidder's failure of performance, except as provided herein, and the Bidder shall be and remain liable to the GSA and GDOE for all direct costs which may be incurred by the GSA and GDOE as a result of the Bidder's negligent performance of any of the services performed under the Contract.

4. **Retention and Access to Records and Other Review**. Bidder, including subcontractors, if any, shall maintain all books, documents, papers, accounting records, and other evidence pertaining to costs incurred and to make such materials available at their respective offices at all reasonable times during the contract period for three (3) years from the date of final payment under the contract; for inspection by GSA and GDOE. Each subcontractor by the Bidder pursuant to the contract shall include a provision containing the conditions of the section.

5. **Property of Documents**. All briefs, memoranda and other incidental work or materials furnished hereunder shall be and remain the property of the GSA and GDOE including all publication rights and copyright interests, and may be used by the GSA and GDOE without any additional cost to the GSA and GDOE, except as provided herein. All documents that form part of the contract are the property of the GSA and GDOE and cannot be reproduced without the GSA and GDOE's authorization, except as provided herein.

6. **Indemnity**. The Bidder agrees to save and hold harmless; the GSA and GDOE, its officers, agents, representatives, successors, and assigns other governmental agencies from any and all suits or actions of every nature and kind, which may be brought forth, or on account of; any injury, death, or damage arising or growing out of the acts or omissions of the Bidder, the Bidder's officers, agents, servants, or employees under the Contract.

7. **Department not Liable**. The GSA and GDOE assumes no liability for any accident or injury that may occur to the Bidder, his or her agents, dependents, or personal property while en route to or from this GSA and GDOE or during any travel mandated by the terms of the agreement. The GSA and GDOE shall not be liable to the Bidder for any work performed by the Bidder prior to the approval of the agreement by the GSA, Chief Procurement Office and GDOE, Superintendent or Designee(s), and the Bidder hereby expressly waives and all claims for service performed in expectation of the agreement prior to its approval by the GSA, Chief Procurement Officer and GDOE, Superintendent or Designee(s).

   The GSA and GDOE assumes no liability for any accident or injury that may occur to the Bidder, his or her agents, dependents, or personal property while en route to or from the GSA and GDOE or during any travel mandated by the terms of the contract. The GSA and GDOE shall not be liable to the Bidder for any work performed by the Bidder prior to the approval of the contract, and the Bidder hereby expressly waives and all claims for service performed in expectation of the contract.

8. **Termination for Defaults Clause.** Pursuant to 2 GAR Div. 4 §6101(8) (a) Default. If the Contractor refuses or fails to perform any of the provisions of this contract with such diligence as will ensure its completion within the time specified in the contact, or any extension thereof, otherwise fails to timely satisfy the contract provisions, or commits any other substantial breach of this contract, the Procurement Officer may notify the contractor in writing of the delay or non-performance and if not cured in ten days or any longer time specified in writing by the Procurement Officer, such officer may terminate the contractor's right to proceed with the contract or such part of the contract as to which there contractor's right to proceed with the contract or such part of the contract as to which there has been delay or a failure to properly perform. In the event of termination in whole or in part the Procurement Officer may procure similar supplies or services in a manner and upon terms deemed appropriate by the Procurement Officer. The contractor shall continue performance of the contract to the extent it is not terminated and shall be liable for excess costs incurred in procuring similar goods or services.

(a) **Contractor's Duties**. Notwithstanding termination of the contract and subject to any directions from the Procurement Officer, the contractor shall take timely, reasonable, and necessary action to protect and preserve property in the possession of the contractor in which the territory has an interest.

(b) **Compensation**. Payment for completed supplies delivered and accepted by the territory shall be at the contract price. Payment for the protection and preservation of property shall be in an amount agreed upon by the contractor and the Procurement Officer; if the parties fail to agree, the Procurement Officer shall set an amount subject to the contractor's rights under Chapter 9 (Legal and Contractual Remedies) of the Guam Procurement Regulations. The territory may withhold from amounts due the contractor such sums as the Procurement Officer deems to be necessary to protect the territory against loss because of outstanding liens or claims of former lien holders and to reimburse the territory for the excess costs incurred in procuring similar goods and services.

(c) **Excuse for Nonperformance or Delayed Performance**. Except with respect to defaults of subcontractors, the contractor shall not be in default by reason of any failure in performance of this contract in accordance with its terms (including any failure by the contractor to make progress in the prosecution of the work hereunder which endangers such performance) if the contractor has notified the Procurement Officer within 15 days after the cause of the delay and the failure arises out of causes such as: acts of God; acts of the public enemy; acts of the territory and any other governmental entity in its sovereign or contractual capacity; fires; floods; epidemics; quarantine restrictions; strikes or other labor disputes; freight embargoes; or unusually severe weather. If the failure to perform is caused by the failure of a subcontractor to perform or to make progress, and if such failure arises out of causes similar to those set forth above, the contractor shall not be deemed to be in default, unless the supplies or services to be furnished by the subcontractor were reasonably obtainable from other sources in sufficient time to permit the contractor to meet the contract requirements. Upon request of the contractor, the Procurement Officer shall ascertain the facts and extent of such failure, and, if such officer determines that any failure to perform was occasioned by any once or more of the excusable causes, and that, but for the excusable cause, the contractor's progress and performance would have met the terms of the contract, the delivery schedule shall be revised accordingly, subject to the rights of the territory under the clause entitled (in fixed-price contracts, "Termination" for Convenience in cost reimbursement contracts)" Termination". (As used in this Paragraph of this clause the term "subcontractor" means subcontractor at any tier.)

(d) **Erroneous Termination for Default.** If, after notice of termination of the contractor's right to proceed under the provisions of this clause, it is determined for any reason that the contractor was not in default under the provisions of this clause, or that the delay was excusable under the provisions of Paragraph (4) (Excuse for Nonperformance or Delayed Performance) of this clause, the rights and obligations of the parties shall, if the contract contains a clause providing for termination for convenience of the territory, be the same as if the notice of termination had been issued pursuant to such clause. If, in the foregoing circumstances, this contract does not contain a clause providing for termination for convenience of the territory, the contract shall be adjusted to compensate for such termination and the contract modified accordingly subject to the contractor's rights under Chapter 9 (Legal and Contractual Remedies) of the Guam Procurement Regulations.

(e) **Additional Rights and Remedies.** The rights and remedies provided in this clause are in addition to any other rights and remedies provided by law or under this contract."

(f)**Termination for convenience Clause**. Pursuant to 2 GAR Div. 4 §6101(10) (a) Termination. The Procurement Officer may, when the interest of the territory so require, terminate this contract in whole or in part, for the convenience of the territory. The Procurement Officer shall give written notice of the termination to the contractor specifying the part of the contract terminated and when termination becomes effective.

(g) **Contractor's Obligations.** The Bidder shall incur no further obligations in connection with the terminated work and on the date set in the notice of termination the Bidder will stop work to the extent specified. The Bidder shall also terminate outstanding orders and subcontracts as they relate to the terminated work. The Bidder shall settle the liabilities and claims arising out to the termination of subcontracts and orders connected with the terminated work. The Procurement Officer may direct the contractor to assign the Bidder's right, title, and interest under terminated orders or subcontracts to the territory, the Bidder must still complete the work not terminated by the notice of termination and may incur obligations as are necessary to do so.

(h) **Right to Supplies**. The Procurement Officer may require the contractor to transfer title and deliver to the territory in the manner and to the extent directed by the Procurement Officer:

(1) any completed supplies; and

(2) such partially completed supplies and materials, parts, tools, dies, jigs, fixtures, plans, drawings, information, and contract rights (hereinafter called "manufacturing material") as the contractor has specifically produced or specially acquired for the performance of the terminated part of this contract. The Bidder shall, upon direction of the Procurement Officer, protect and preserve property in the possession of the contractor in which the territory has an interest. If the Procurement Officer does not exercise the is right, the contractor shall use best efforts to sell such supplies and manufacturing materials in accordance with the standards of Uniform Commercial Code of Guam, §2706 (U.S.C.G. §2706 is quoted at the end of this §6101(10) (d) Utilization of this Section in no way implies that the territory has breached the contract by exercise of the Termination for Convenience Clause.

(i) **Compensation.**

(1) The contractor shall submit a termination claim specifying the amounts due because of the termination for convenience together with cost or pricing data to the extent required by §3118 (Cost or Pricing Data) of the Guam Procurement Regulations bearing on such claim. If the contractor fails to file a termination claim within one year from the effective date of termination, the Procurement Officer may pay the contractor, if at all, an amount set in accordance with Subparagraph (c) of this Paragraph.

(2) The Procurement Officer and the contractor may agree to a settlement provided the contractor has filed a termination claim supported by cost or pricing data to the extent required by §3118 (Cost or Pricing Data) of the Guam Procurement Regulations and that the settlement does not exceed the total contract price plus settlement costs reduced by payments previously made by the territory, the proceeds of any sales of supplies and manufacturing materials under Paragraph of this clause, and the contract price of the work not terminated.

(3) Absent complete agreement under Subparagraph (b) of this Paragraph, the Procurement Officer shall pay the Bidder the following amounts, provided payments agreed to under Subparagraph (b) shall not duplicate payments under this Subparagraph:

(a) contract prices for supplies or services accepted under the contract;

(b) costs incurred in preparing to perform and performing the terminated portion of the work plus a fair and reasonable profit on such portion of the work (such profit shall not include anticipatory profit or consequential damages) less amounts paid or to be paid for accepted supplies or services; provided, however, that if it appears that the contractor would have sustained a loss if the entire contract would have been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss;

(c) costs of settling and paying claims arising out of the termination of subcontractors or orders pursuant to Paragraph (2) of this clause. These costs must not include costs paid in accordance with Subparagraph (c) of this Paragraph;

(d) the reasonable settlement costs of the contractor including accounting, legal, clerical, and other expenses reasonably necessary for the preparation of settlement claims and supporting data with respect to the terminated portion of the contract for the termination and settlement of subcontracts thereunder, together with reasonable storage, transportation , and other costs incurred in connection with the protection or disposition of property allocable to the terminated portion of this contract. The total sum to be paid the Bidder under this Subparagraph shall not exceed the total contract price plus the reasonable settlement costs of the Bidder reduced by the amount of payments otherwise made, the proceeds of any sales of supplies and manufacturing materials under Subparagraph (b) of this Paragraph, and the contract price of work not terminated.

(4) Cost claimed, agreed to, or established under Subparagraph (b) and (c) of this Paragraph shall be in accordance with Chapter 7 (Cost Principles) of the Guam Procurement Regulations."

9. <u>Changes Clause</u>

A. CHANGE ORDER: *reference GAR§ 6101 (3) (a)*

By a written order, at any time, and without notice to surety, the Procurement Officer may, subject to all appropriate adjustments, make changes within the general scope of this contract in any one or more of the following:

(1) Drawing, designs, or specifications, if the supplies to be furnished are to be specially manufactured for the territory in accordance therewith;

(2) Method of shipment or packing; or

(3) Place of delivery.

B. ADJUSTMENTS OF PRICE OR TIME FOR PERFORMANCE:

If any such change order increases or decreases Contractor's cost of, or the time required for performance of any part of the work under this contract, whether or not changed by the order, any adjustment shall be made and the contract modified in writing accordingly. Any adjustment in contract price made pursuant to this clause shall be determined in accordance with the Price Adjustment Clause of this contract.

Failure of the parties to agree to an adjustment shall not excuse Contractor from proceeding with the contract as changed, provided that the territory promptly and duly make such provisional adjustments in payment or time for performance as may be reasonable. By proceeding with the work, Contractor shall not be deemed to have prejudiced any claim for additional compensation, or an extension of time for completion.

C. TIME PERIOD FOR CLAIM:

Within 30 days after receipt of a written change order under Paragraph (1) (Change Order) of this clause, unless such period is extended by the Procurement Officer in writing, Contractor shall file notice of intent to assert a claim for an adjustment.

Later notification shall not bar Contractor's claim unless the territory is prejudiced by the delay in notification.

1. Claims Barred After Final Payment.
No claim by Contractor for an adjustment hereunder shall be allowed if notice is not given prior to final payment under this contract.

2. Other Claims Not Barred.
In the absence of such a change order, nothing in this clause shall be deemed to restrict Contractor's right to pursue a claim arising under the contract if pursued in accordance with the clause entitled, "Claims Based on a Procurement Officer's Actions or Omissions, Notice of Claim Clause', or for breach of contract.

D. STOP WORK ORDER: *reference GAR§ 6101(4) (c)*

1. Order to Stop Work.
The Procurement Officer may, by written order to Contractor, at any time, and without notice to any time, and without notice to any surety, require the Contractor to stop all or any part of the work called for by this contract. This order shall be for specified period not exceeding 90 days after the order is delivered to Contractor, unless the parties agree to any further period. Any such order shall be identified specifically as a stop work order issued pursuant to this clause. Upon receipt of such an order, Contractor shall forthwith comply with its terms and take all reasonable steps to minimize the occurrence of costs allocable to the work covered by the order during the period of work stoppage. Before the stop work expires, or within any further period to which the parties shall have agreed, the Administrator of Supply Management shall either:

(i) Cancel the stop work order; or

(ii) Terminate the work covered by such order as provided in the "Termination for Default Clause" or the "Termination for Convenience Clause" of this contract.

2. Cancellation or Expiration of the Order.

If a stop work order issued under this clause is cancelled at any time during the period specified in the order, or if the period of the order or any extension thereof expires, the Contractor shall have the right to resume work. An appropriate adjustment shall be made in the delivery schedule or contract price shall be modified in writing accordingly, if:

(i) the stop work order results in an increase in the time required for, or in the Contractor's cost properly allocable to, the performance of any part of this contract; and

(ii) Contractor asserts a claim for such an adjustment within 30 days after the end of the period of work stoppage; provided that, if the Procurement Officer decides that the facts justify such action, any such claim asserted may be received and acted upon at any time prior to final payment under this contract.

3. Termination of Stopped Work.

If a stop work order is not cancelled and the work covered by such order is terminated for default or convenience, the reasonable costs resulting from the stop work order shall be allowed by adjustment or otherwise.

4. Adjustment of Price. Any adjustment in contract price made pursuant to this clause shall be determined in accordance with the Price Adjustment Clause of this contract.

5. PRICE ADJUSTMENTS: *reference GAR § 6101(6)*

A. Price Adjustment Methods.

Any adjustment in contract price pursuant to a clause in this contract shall be made in one or more of the following ways:

(i) by agreement on a fixed price adjustment before commencement of the pertinent performance or as soon thereafter as practicable;

(ii) by unit prices specified in the contract or subsequently agreed upon;

(iii) by the costs attributable to the event or situation covered by the clause, plus appropriate profit or fee, all as specified in the contract or subsequently agreed upon;

(iv) in such other manner as the parties may mutually agree; or

(v) in the absence of agreement between the parties, by a unilateral determination by the Procurement Officer of the costs attributable to the event or situation covered by the clause, plus appropriate profit or fee, all as computed by the Procurement Officer in accordance with generally accepted accounting principles and applicable sections of the regulations promulgated under Chapter 7 (Cost Principles) of the GAR and subject to the provisions of Chapter 9 (Legal and Contractual Remedies) of the GAR.

B. Submission of the Cost or Pricing Data.

Contractor shall provide cost or pricing data for any price adjustments subject to the provisions of §3118 (Costs or Pricing Data) of the GAR.

6. CLAIMS BASED ON PROCUREMENT OFFICER'S ACTIONS OR OMISSIONS: *reference GAR § 5106(8).*

A. Notice of Claim.

If any action or omission on the part of Procurement Officer, or designee of such officer, requiring performance changes within the scope of the contract constitutes the basis for a claim by Contractor for additional compensation, damages, or an extension of time for completion, Contractor shall continue with performance of the contract in compliance with the directions or orders of such officials, but by so doing, Contractor shall not be deemed to have prejudiced any claim for additional compensation, damages, or an extension of time for completion; provided:

(a) Contractor shall have given written notice to the Procurement Officer, or designee of such officer:

(i) prior to the commencement of the work involved, if at that time Contractor knows of the occurrence of such action or omission;

(ii) within 30 days after Contractor knows of the occurrence of such action or omission, if Contractor did not have such knowledge prior to the commencement of the work; or

(iii) within such further time as may be allowed by the Procurement Officer in writing.

(a) this notice shall state that Contractor regards the act or omission as a reason which may entitle Contractor to additional compensation, damages, or an extension of time.

The Procurement Officer or designee of such officer, upon receipt of such notice, may rescind such action, remedy such omission, or take such other steps as may be deemed advisable in the discretion of the Procurement Officer or designee of such officer.

(b) the notice required by Subparagraph (a) of this Paragraph describes as clearly as practicable at the time the reasons why Contractor believes that additional compensation, damages, or an extension of time may be remedies to which Contractor is entitled; and

(c) Contractor maintains and, upon request, makes available to the Procurement Officer within a reasonable time, detailed records to the extent practicable, of the claimed additional costs or basis for an extension of time in connection with such changes.

B. Limitations of Clause.

Nothing herein contained, however, shall excuse the Contractor from compliance with any rules of law precluding any territorial officers and any Contractors from acting in collusion or bad faith in issuing or performing change orders which are clearly not within the scope of the contract."

C. Adjustment of Price.

Any adjustment in the contract price made pursuant to this clause shall be determined in accordance with the Price Adjustment Clause of this contract.

10. WAGE AND BENEFIT COMPLIANCE-CONTRACTORS PROVIDING SERVICES

(a) Contractor with regard to all person its employs whose purpose in whole or in part is the direct delivery of services contracted for with the Government of Guam in this procurement, shall pay such employees in accordance with the Wage Determination for Guam and the Northern Marianas Islands issued and promulgated by the U.S. Department of Labor for such labor as is employed in the direct deliverance of deliverables to the government of Guam. 5 GCA § 5801 Contractor shall be responsible for flowing down this obligation to its subcontractors.

(b) The Wage Determination most recently issued by the U.S. Department of Labor at the time this Agreement was awarded to Contractor shall be used to determine wages and benefits which shall be paid to employees pursuant to this clause. 5 GCA § 5801

(c) Should any contract contain a renewal clause, then at the time of renewal adjustments there shall be stipulations contained in that contract for applying the Wage Determination, so that the Wage Determination promulgated by the U.S Department of Labor on a date most recent to the renewal date shall apply. 5 GCA § 5801

(d) In addition to the Wage Determination detailed above, health and similar benefits for employees having a minimum value as detailed in the Wage Determination issued and promulgated by the U.S. Department of Labor shall apply. Contractor shall pay a minimum of ten (10) paid holidays per annum per employee. 5 GCA § 5802

Any violation of Contractor or its subcontractors obligations of this section shall be investigated by the Guam Department of Labor and may include a monetary penalty assessment by the Guam Department of Labor of no less than One Hundred Dollars ($100.00) per day, and no more than One Thousand Dollars ($1,000.00) per day, until such time as a violation has been corrected, as well as the payment of all back wages and benefits due. 5 GCA § 5803

(f) In addition to any and all other breach of contract actions the Government of Guam may have under this procurement, in the event there is a violation in the process set forth in subsection (e) above, Contractor may be placed on probationary status by the Chief Procurement Officer of the General Service Agency, or its successor, for a period of one (1) year.

During the probationary status, a Contractor shall not be awarded any contract by any instrumentality of the Government of Guam. A Contractor who has been placed on probationary status, or has been assessed a monetary penalty pursuant to 5 G.C.A. Article 13 Title 5 may appeal such penalty or probationary status to the Superior Court of Guam. 5 GCA § 5804

(g) Contractor along with all proposed offerors and submitter under this procurement were required to submit a Declaration of Compliance with Wage Determination laws as part of this procurement with a copy of the most recent Wage Determination for Guam and the Northern Marianas Islands issued and promulgated by the U.S. Department of Labor. 5 GCA §5805

(h) The applicable USDOL Wage Determination Rate Revision (as defined by subsections (b) and (c)) is to this Agreement. Contractor agrees to provide upon written request by the Government of Guam written certification of its compliance with its obligations as part of each invoice, along with the names of any employees, their positions, and detailed wage and benefits paid in keeping with this section. Additionally upon request by Government of Guam the Contractor shall submit source documents as to those individuals provide direct services in part or whole under this Agreement and its payments to them of such wages and benefits.

11. Ethical Standards:

With respect to this procurement and any other contract that the Contractor may have, or wish to enter into, with any government of Guam agency, the Contractor represents that it has not knowingly influenced, and promises that it will not knowingly influence, any government employee to breach any of the ethical standards set forth in the Guam Procurement Law and in any of the Guam Procurement Regulations.

12. Prohibition against Gratuities and Kickbacks:

With respect to this procurement and any other contract that the Contractor may have or wish to enter into with any government of Guam agency, the Contractor represents that he has not violated, is not violating, and promises that he will not violate the prohibition against gratuities and kickbacks set forth in the Guam Procurement Regulations.

13. Prohibition against Contingent Fees:

The Contractor represents that he has not retained any person or agency upon an agreement or understanding for a percentage, commission, brokerage, or other contingent arrangement, except for retention of bona fide employees or bona fide established commercial selling agencies, to solicit or secure this Agreement or any other contract with the government of Guam or its agencies.

14.* Contractor's Warranty as to Employees and Sex Offenses. *Reference 5 GCA 5253 (b)

Contractor warrants that no person providing services on behalf of the Contractor has been convicted of a sex offense under the provisions of Chapter 25 of Title 9 of GCA or an offense as defined in Article 2 of Chapter 28, Title 9 GCA, or an offense in another jurisdiction with, at a minimum, the same elements as such offenses, or who is listed on the Sex Offender Registry.

Contractor warrants that if any person providing services on behalf of Contractor is convicted of a sex offense under the provisions of Chapter 25 of Title 9 GCA, or an offense as defined in Article 2 of Chapter 28, Title 9 GCA, or an offense in another jurisdiction with, at a minimum, the same elements as such offenses, or who is listed on the Sex Offender Registry, that such person will be immediately removed from working at said agency and that the administrator of said agency be informed of such within twenty-four (24) hours of such conviction. Any contactor found in violation of this section, after notice from the Government of Guam, after notice from the contracting authority of such violation, shall within twenty-four (24) hours, take corrective action and shall report such action to the contracting authority. Failure to take corrective action with the stipulated period may result in the temporary suspension of the contract at the discretion of the Government of Guam.

15. Policy in Favor of Service-Disabled Veteran Owned Businesses

P.L. 31-115 (September 20, 2011) 5 GCA § 5011 and § 5012 In the procurement of any supply or service, (except for professional services), if such supply or service is offered by a Service-Disabled Veteran Owned Business "SDVOB", as defined in 5 GCA § 5012, that is at least fifty one percent (51%) owned by service-disabled veteran(s), and if the supply or service is available within the period that is required for the procurement, and the price for the supply or service does not exceed one hundred five percent (105%) of the lowest bidder price, a preference shall be given to that SDVOB by the Government of Guam, and the supply or service shall be purchased from said SDVOB. This shall be in addition to any other procurement benefit the SDVOB may qualify for under Guam law. A business concern is a qualified SDVOB if: (a) the business concern is licensed to do business on Guam; (b) the business concern maintains its headquarters on Guam; (c) the business concern is at least fifty-one (51%) owned by a service-disabled veteran(s) who served in the active U.S. military service, was discharged or released under honorable conditions and whose disability is service-connected as demonstrated by a DD214, and certified by an award letter from the U.S. Department of Veterans Affairs; the DD214 and Disability award letter from U.S. Department of Veterans Affairs are submitted to the Government of Guam procuring agency for every service offered; and the service disabled veteran(s) owner(s) of the business concern has filed individual tax returns on Guam for a period of at least three (3) consecutive years.

16. Term: (Multi-Term)

A Purchase Order will be issued to the successful bidder. Completion of Installation per School is Sixty (60) Calendar Days upon receipt of Purchase Order. Maintenance is for a period of Two (2) years with an option to renew on a year to year basis for an additional three (3) years upon the availability of funds. Maintenance starts immediately upon acceptance of installation and completion of electronic system. The bid price offered by the contractor shall remain the same throughout the contract term and all subsequent renewal terms except as otherwise provided in the contract terms and conditions.

In the event funds are not appropriated or otherwise made available to support continuation of performance in a subsequent fiscal period, the contract shall be canceled and the contractor shall be reimbursed or the reasonable value of any non-recurring costs incurred but not amortized in price of supplies or services delivered under the contract. The cost of cancellation may be paid from any appropriations available for such purposes. The Government of Guam shall notify Contractor on a timely basis in writing that the funds are, or not, available for the continuation of the contract for each succeeding fiscal period. The multi-term period as set forth in this clause, does not affect either the Government of Guam's rights or the Contractor's rights under any termination clause of this contract.

17. Public Law 30-168, Prohibiting Discrimination for the Government of Guam Programs Solely on the Basis of Conviction of Status Offense.

The Bidder shall comply with the provision of this mandate in which no private entity that receives Government of Guam funding for any of its program may, solely on the basis of conviction of a status offense, discriminate against any person who would otherwise be eligible. Status offenses referenced above relates to truancy, possession of alcohol, or possession of tobacco.

18. Public Record.

The GSA shall assume without a specific written designation that all elements of the IFB are a matter of public record.

19. Monitoring.

The Bidder cannot deny GSA and GDOE when it is conducting monitoring activities. Monitoring may include on-site observation of activities and/or staff, facility inspections, and discussions with clients regarding the effectiveness of the program. All documents related to the operations and delivery of services is subject to review by the GSA and GDOE.

20. Assign or Subcontract.

The Bidder shall not assign or subcontract the Agreement, or any sum becoming due the Bidder under the provisions of the Agreement, without prior written consent of the GSA and GDOE.

21. MANDATORY DISPUTES CLAUSE (2 GAR Div. 4 §9103(g))

Pursuant to the Guam Administrative Rules and Regulations, the following provisions shall govern controversies or disputes between Department and Bidder:

The Parties agree to attempt resolution of all controversies which arise under, or are by virtue of, this Agreement through mutual agreement. If the controversy is not resolved by mutual agreement, then Bidder shall request Department in writing to issue a final decision within sixty (60) days after receipt of the written request. If Department does not issue a written decision within sixty (60) days after written request for a final decision, or within such longer period as may be agreed upon by the parties, then Bidder may proceed as though Department had issued a decision adverse to Bidder.

Department shall immediately furnish a copy of the decision to Bidder, by certified mail with a return receipt requested, or by any other method that provides evidence of receipt. DPHSS's decision shall be final and conclusive, unless fraudulent or unless Bidder appeals the decision to the Office of Public Accountability.

Bidder shall exhaust all administrative remedies before filing an action in the Superior Court of Guam in accordance with applicable laws.

Bidder shall comply with Department's decision and proceed diligently with performance of this Agreement pending final resolution by the Office of Public Accountability of any controversy arising under, or by virtue of, this Agreement, except where Bidder claims a material breach of this Agreement by Department. However, only where Department makes a written determination that continuation of work under the contract is essential to the public health and safety, and such determination is supported by substantial facts, then Bidder shall proceed diligently with performance of the Agreement.

22. MISCELLANEOUS PROVISIONS

a) **Severability.** The provisions of this Contract will be deemed severable, and the unenforceability of any one or more provisions will not affect the enforceability of any other provisions. In addition, if any provision of this Contract, for any reason, is declared to be unenforceable, the parties will substitute an enforceable provision that, to the maximum extent possible in accordance with applicable law, preserves the original intentions and economic positions of the parties.

b) **No Waiver.** No failure or delay by either party in exercising any right, power or remedy will operate as a waiver of such right, power or remedy, and no waiver will be effective unless it is in writing and signed by the waiving party. If either party waives any right, power or remedy, such waiver will not waive any successive or other right, power or remedy the party may have under this Contract.

c) **Assignment, Successors and Assigns.** Neither party may assign or otherwise transfer this Contract or without the prior written consent of the other party. Any purported assignment in violation of the preceding sentence will be void and of no effect. This Contract will be binding upon the parties' respective successors and permitted assigns.

d) **Scope of Contract.** Refer to Invitation for Multi-Step Bid No. GSA _____is incorporated with this agreement.

e) **Federal Education Rights and Privacy Act.** Contractor acknowledges that certain information about GDOE students may be considered Education Records and that this information must be confidential Educational Rights and Privacy Act of 1974, 20 USC § 1232g, and related regulations (collectively referred to as "FERPA"). Both parties agree to protect these records in accordance with FERPA and a standard operation procedure. Contractor represents, warrants, and agrees that if it receives anything protected by FERPA in accordance with this Agreement, it will: (1) hold the FERPA Records in strict confidence and will not use or disclose the FERPA Records except as (a) permitted or required by the Contract, (b) required by law, or (c) otherwise authorized by GDOE in writing; (2) safeguard the FERPA Records according to commercially reasonable administrative, physical and technical standards that are no less rigorous than the standards by which Contractor protects its own confidential information; and (3) continually monitor its operations and take any action necessary to assure that the FERPA Records are safeguarded in accordance with the terms of the Contract. Contractor agrees to provide GDOE with a written summary of the procedures Contractor uses to safeguard the FERPA Records.

Contractor will have procedures and solutions implemented to prevent unauthorized access, and the procedures will be documented and available for GDOE to review on request. Those employees allowed to send data and receive data to and from the Contractor must be identified and sign a non-disclosure agreement.

Accidental exposures of data covered by the Contract to unauthorized persons will result in the Contractor notifying DOE within four (4) hours of discovery; failure to do will be considered a material breach of the Contract. Notification to those whose data have been exposed will occur, at Contractor's sole expense, by GDOE.

Within thirty (30) days after the termination or expiration of the term of the Contract for any reason, Contractor shall either: (a) return or destroy, as applicable, all Sensitive Data, including any data protected under FERPA, provided to the Contractor by GDOE, including all sensitive data, including any data protected under FERPA, provided to Contractor's employees, sub-contractors, agents, or other affiliated persons or entities; or (b) in the event that returning or destroying the sensitive data, under FERPA, is not feasible, provide notification of the conditions that make return or destruction not feasible, in which case, the Contractor must continue to protect all sensitive data, including any data protected under FERPA, that it retains and agree to limit further uses and disclosures of such data to those purposes that make the return or destruction not feasible as Contractor maintains such sensitive data, including any data protected under FERPA.

f) **Disputes Clause.** A. In accordance with Guam procurement law, all controversies between the territory and the Contractor which arise under, or by virtue of, this contract and which are not resolved by mutual agreement, shall be decided by the GDOE procurement officer in writing, within 60 days after written request by the Contractor for a final decision concerning the controversy; provided however that if the procurement officer does not issue a written decision within 60 days after written request for a final decision, or within such longer period as may be agreed upon by the parties, then the Contractor may proceed as if an adverse decision had been received.
The procurement officer shall immediately furnish a copy of the decision to the Contractor, by certified mail, return receipt requested, or by any other method that provides evidence of receipt. Any such decision shall be final and conclusive, unless fraudulent, or the Contractor brings an action seeking review of the decision before the Guam Office of Public Accountability. The Contractor shall comply with any decision of the procurement officer and proceed diligently with performance of this contract pending final resolution by the Office of Public Accountability or the Superior Court of Guam of any controversy arising under or by virtue of this contract, except where there has been a material breach of the contract by GDOE; provided, however, that in any event the Contractor shall proceed diligently with the performance of the contract where GDOE has made a written determination that continuation of work under the contract is essential to public health and safety.

B. Any disputes for expenses incurred in reliance upon this Agreement shall be subject to the Government Claims Act found at Title 5, Guam Code Annotated, Chapter 6.

23. RECEIPT HANDLING AND EVALUATION OF UNPRICED TECHNICAL BIDDERS.

Procedure for Phase One of Multi-Step Sealed Bidding: Receipt and Handling of Unpriced Technical Offers. Unpriced technical offers shall not be opened publicly, but shall be opened in front of two or more procurement officials. Such offers shall not be disclosed to unauthorized persons. Bidders may request nondisclosure of trade secrets and other proprietary data identified in writing.

Evaluation of Unpriced Technical Offers:

The unpriced technical offers submitted by bidders shall be evaluated solely in accordance with the criteria set forth in the Invitation for Bids. The unpriced technical offers shall be categorized as:

Acceptable: (80 to 100 points)

Potentially acceptable, that is, reasonably susceptible of being made acceptable: (60 to 79) or

Unacceptable. The Procurement Officer shall record in writing the basis for finding an offer unacceptable and make it part of the procurement file. (Below 60)

The Procurement Officer may initiate Phase Two of the procedure if, in the Procurement Officer's opinion, there are sufficient acceptable unpriced technical offers to assure effective price competition in the second phase without technical discussions. If the Procurement Officer finds that such is not the case, the Procurement Officer shall issue an amendment to the Invitation for Bids or engage in technical discussions as set forth in 2 GAR Div 4 Subsection 3109(t)(5) of this Section.

Discussions of Unpriced Technical Offers. The Procurement Officer may conduct discussions with any bidder potentially acceptable technical offer. During the course of such discussions, the Procurement Officer shall not disclose any information derived from one unpriced technical offer to any other bidder. Once discussions are begun, any bidder who has not been notified that its offer has been fi8nally found unacceptable may submit supplemental information amending its technical offer at any time until the closing date established by the Procurement Officer. Such submission may be made at the request of the Procurement Officer or upon the bidder's own initiative.

Notice of Unacceptable Unpriced Technical Offer. When the Procurement Officer determines a bidder's unpriced technical offer to be unacceptable, such offeror shall not be afforded an additional opportunity to supplement its technical offer.

Procedure for Phase Two. Upon the completion of Phase One, the Procurement Officer shall either: Open priced bids submitted in Phase One (if priced bids were required to be submitted) from bidders whose unpriced technical offers were found to be acceptable.

Conduct. Phase Two shall be conducted as any other competitive sealed bid procurement except:

As specifically set forth in 2 GAR Div 4 §3109 (r) (Multi-Step Sealed Bidding) through this section.

No public notice need be given of this Invitation to submit priced bids because such notice was previously given;

After award the unpriced technical offer of the successful bidder shall be disclosed. Offer of the successful bidder shall be disclosed pursuant to 2 GAR Div 4 3109(v)(2)(c).

Offers that are not selected shall not be disclosed except per 2 GAR Div 4 3109(v)(2)(c).

24. EVALUATION CRITERIA - 3 Step Evaluation Process

A. GENERAL INFORMATION

The following outlines the requirements for technical un-price offer proposal submittals.

Pursuant to this multi-step sealed bid invitation, the Chief Procurement Officer and the Guam Department of Education shall appoint an evaluation committee who will be selected from employees within the government of Guam.

The committee shall be tasked to review, evaluate and score all aspects pertaining to this multi-step sealed bid invitation, and forward its' recommendation to the Chief Procurement Officer, General Services Agency.

B. RATING CATEGORIES AND POINT ALLOCATION TABLE

The overall and cumulative parameters that will serve as a point scoring guide based on the following general areas:

Rating Categories and Point Allocation Table

Categories	Areas and Subject Matters	Pts. Allocated
1	Expertise & experience in Access Control, Intrusion Detection, and CCTV Security System	**30**
2	Implementation plans and drawings for performance of required services	**30**
3	Clarify of Multi-Step Technical Submittal	**20**
4	Satisfactory record of past performance, integrity and reputation	**10**
5	Project Understanding and approach of the scope of services	**10**
	TOTAL POINTS	**100**

BASIC SECURITY SYSTEM MATERIALS AND METHODS

PART 1 GENERAL

1.1 **STANDARD PRODUCTS**: Material and equipment shall be the standard products of a manufacturer regularly engaged in the manufacture of such products. Items of equipment shall essentially duplicate equipment that have been in satisfactory use at least 2 years prior to bid opening. Equipment shall be supported by successful bidder for a period of one (1) year from the time of acceptance by GDOE. Maximum response time for service shall be no more than one hour from the time a report is submitted.

Comply: ___ Yes ____ No

1.2 **RELATED DOCUMENTS:** This section shall apply to all phases of work specified, on the specifications, and required to provide all security systems complete and operable for the project; coordinate all such work to attain fully operational systems throughout the project. The intent of this specification to provide a complete and operating security system in accordance with all bid documents.

Comply: ___ Yes ___ No

1.3 **WORK INCLUDED**: Provide all labor, materials, services and skilled supervision necessary for the installation, connection, testing, and adjustment of all circuits and security equipment required by the bid documents, complete in all respects and ready for use.

1.4 **SUPERVISION OF WORK:** Security System work shall be under the full supervision of a professional Security System Technician. Within 30 calendar days after the Bidder has received the Notice to Proceed, shall submit a certification from the Bidder stating that the work will be done under his full supervision. At the conclusion of the work, prior to final inspection, submit certification that the work was done in accordance with security documents and the installation complies with the latest Security Systems Code.

1.5 **COORDINATION OF WORK**:

A. Plan all work so that it proceeds with a minimum of interference with other on going projects, if any.

B. Work lines and established heights shall be in accordance with security system or electrical Codes as required by the Department of Public Works Building Codes.

C. Lay-out and coordinate all work well in advance to avoid conflicts or interference with other work in progress so that in the event of interference, the security layout may be altered to suit the conditions, prior to the installation of any work, and without additional cost to the Owner. Conflicts arising from lack of coordination shall be the Bidder's responsibility.

D. Maintain all code required clearance around electrical/security equipment. Unless specifically noted otherwise, establish the exact location of electrical/security equipment based on the actual dimensions of equipment furnished.

1.6 **COOPERATE WITH OTHER TRADES**:

A. Cooperate and coordinate all work of other on-going projects, if any; afford reasonable opportunity for the execution of their work. Properly connect and coordinate this work with the work of other on-going projects, if any; at such time and in such a manner as not to delay or interfere with their work.

B. Promptly report to the General Services Agency any delay or difficulties encountered in the installation of this work which might prevent prompt and proper installation, or make it unsuitable to connect with or receive the work of others. Failure to report shall constitute an acceptance of the work of other projects as being fit and proper for the execution of this work.

1.7 **CODES, PERMITS AND FEES**:

A. Perform work in accordance with the National Security Systems Code, applicable building ordinances, and other applicable codes, hereinafter referred to as the "Code". Where the bid documents exceed minimum requirements, the most stringent shall apply unless variance is approved.

B. Complying with all requirements for permits, licenses, fees, and codes. Obtain all required permits, licenses, inspections, and pay all fees required to perform the work described in the bid documents.

1.8 **CONTRACT DRAWINGS:**

The Bidder shall provide with their bid a diagram/drawing to convey the scope of work, indicating the intended general arrangement of security equipment. The Bidder will follow the drawings in laying out the work and verify spaces for the installation of materials and equipment based on actual dimensions. Of equipment furnished. Wherever a question exists regarding the intended location of equipment, circuiting, etc., obtain instructions from the GDOE Safety Administrator and concurred in writing by the Chief Procurement Officer of the General Services Agency (GSA).

1.9 **NEW EQUIPMENT AND MATERIAL**: Unless otherwise specified, equipment and materials of the same type of classification, and used for the same purpose shall be products of the same manufacturer. Use only new and un-weathered material

1.10 **APPLICABLE DOCUMENTS**:

A. Manufacturer, testing and method of installation of all apparatus and materials furnished as per the specifications shall conform to the latest publications or standard rules of the following:

Institute of Electrical and Electronic Engineers

(Formerly American Institute of Electrical Engineers)- IEEE

American Society for Testing and Materials –ASTM

American National Standards Institute – ANSI

International Building Code – IBC

Insulated Power Cable Engineers Association – IPCEA

Department of Public Works Standards, Government of Guam – DPW

1.11 EXECUTION OF THE WORK:

A. Installation equipment and materials in neat and workmanlike manner and align level and adjust for proper operation. Install equipment so that all parts are easily accessible for inspection, operation, maintenance, and repair.

B. Where damage, marring or disfigurement has occurred, replace or refinish the damaged surfaces as directed, and to the satisfaction of the government.

C. Provide the design, fabrication, and erection of all supplementary structural framing required for attachment of hangers or other devices supporting electrical/security equipment's. Submit design/shop drawing to the GDOE Safety Administrator and concurred by the Chief Procurement Officer, GSA for review and approval.

1.12 SPECIAL CONSIDERATION:

A. **Cutting, Patching and Piercing**:
Obtain written permission from the Safety Administrator before cutting or piercing structural members.

1. Use craftsmen skilled in their respective trades for cutting, fitting, repairing, patching of plaster and finishing of materials including carpentry work, metal work or concrete work required for by specifications. Do not weaken walls, partitions or floor by cutting. Holes required to be cut in floors must be drilled or cored without breaking or spalling around the holes. Do all necessary patching and/or refinishing as instructed by the Safety Administrator.

2. Sleeves through floors and walls to be galvanized rigid steel flush with walls, ceiling or finished floors; size to accommodate the raceway.

3. Use care in piercing waterproofing. After the part piercing waterproofing has been set in place, seal opening and make absolutely watertight.

4. Provide baked white enamel painted spring-clipped escutcheon plates where exposed pipe passes through walls, floors, or ceilings. Cover sleeves and entire opening made for the pipe with escuteon plates. Field applied paint finish shall match color of surrounding finish. Seal all conduit openings through floor slabs, masonry walls, and continuous partitions to make air and watertight. Tightly caulk space between conduit and abutting materials with fiberglass insulation and nonflammable sealant.

B. Seal equipment or components exposed to the weather and make watertight and insect-proof. Protect equipment outlets and conduit openings with temporary lugs or caps at all time that work is not in progress.

C. Equipment Access: Locate devices and pull boxes to allow easy Equipment Identification: Identify each piece of equipment with plastic laminate nameplates, black face with white core letters, having proper and complete identification. Clearly identify on the equipment served, and spell out the full name of the equipment.

D. Equipment Access: Locate devices and pull boxes to allow easy access for operation, repair and maintenance, and if concealed, provide access doors.

E. Equipment Bases: Provide equipment bases on all floor-mounted equipment furnished under this Bid.

F. Protection of apparatus, materials and equipment: Take all necessary precautions to properly protect all apparatus, fixtures, appliances, material, equipment and installations from damage of any kind. The Safety Administrator may reject any particular piece or pieces of material, apparatus, or equipment which has scratches, dents or otherwise damaged.

G. Operation and Maintenance Manuals: During the time of the Contract and before final acceptance of the security installation, submit to the Safety Administrator and the Chief Procurement Officer three copies of all descriptive literature, maintenance recommendations from the equipment manufacturer, data of initial operation, wiring diagrams and parts list of each item of security equipment installed under the Bid; submit all manufacturer's guarantees and warranties.

H. Painting Preparation: Prepare all exposed fittings, conduits, boxes, and supports for painting; remove traces of oil, grease and dirt. Employ all necessary precautionary methods to prevent scratching or defacing of all security apparatus and devices.

I. Painting: Exposed conduit, boxes installed after room has been painted, shall be painted to match room finish by the Bidder.

J. Corrosion Control: All corrosive metal surfaces, conduits/fittings, pipelines and structures shall be provided with corrosion inhibiting primer before installation. Appropriate surface preparation shall be made before application of primer.

K. Rust Prevention: Unless otherwise noted, provide hot dip galvanized finish for all ferrous materials. In addition, outdoor installations shall be field painted with two coats of epoxy paint inside and outside.

L. Tests: Provide all tests as outlined hereinafter, and other tests necessary to establish the adequacy, quality, safety, completed status, and suitable operation of each system. Tests shall be conducted in the presence of the Safety Administrator.

M. Seismic Consideration: Installation shall meet Seismic zone 4 requirements.

N. Wind-load Consideration: Installation exposed to outdoors shall be designed to withstand 170 MPH wind speed IBC 2009 Exposure C and ASCE7-05.

1.13 QUALITY ASSURANCE:

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work and the specifications as provided.

B. Without additional cost to the Government, Bidder shall provide such other labor and materials as are required to complete the work required by the specifications in accordance with the requirements of governmental agencies having jurisdiction, regardless of whether such materials and associated labor are called for elsewhere in these bid documents.

1.14 WARRANTY: Provide as specified in the individual specifications.

1.15 DRAWINGS:

A. The Bidder shall maintain at the site one copy of all drawings, specifications, amendments, and other modifications, in good order and marked to record all changes made during installation. These shall be made available to the Safety Administrator.

B. At the conclusion of the work, the Bidder will be furnished by the Safety Administrator, at the Bidder's expense, a set of reproducible made from original contract plans. The Bidder shall then incorporate all changes made, as recorded, into the set of reproducible in a clear, legible and reproducible manner. All security lines, communication lines, and stub-outs shall be dimensionally located within the building structure. As a condition for acceptance of work, reproducible shall be signed by Bidder attesting that all changes have been incorporated, dated and delivered to the Safety Administrator and the Chief Procurement Officer.

1.16 **SPARE PARTS AND MAINTENANCE PRODUCTS:**

A. Provide spare parts, maintenance, and extra Products in quantities specified in individual specification sections.

B. Deliver to Project site and place in location as directed; obtain receipt prior to final payment.

2. INTERIOR WIRING SYSTEM

2.1 **SUBMITTALS**:

Manufacturer's Data Sheet shall be submitted to include the following:

A. Conduit and fittings (each type)
B. Insulated conductors
C. Outlet and junction boxes

2.2 **PRODUCTS**:

Materials and Equipment's: Materials, equipment and devices shall, as a minimum, meet the requirements of UL, where UL standards are established for those items, and the requirements of NFPA 70.

2.3 **CONDUITS AND FITTINGS**:

A. Rigid Steel Conduit (Zinc-Coated) ANSI C80.1, UL 6

B. Rigid Aluminum conduit ANSI C80.5, UL 6

C. Electrical Metallic Tubing (EMT) UL 797, ANSI C80.3

D. Flexible Metal Conduit UL 1

1. Liquid-Tight flexible Metal Conduit (Steel) UL 360

E. Fittings for Metal Conduit, EMT and Flexible Metal Conduit UL 514B. Ferrous fittings shall be cadmium- or zinc-coated in accordance with UL 514B.

1. Fittings for Rigid Metal Conduit. Threaded type. Split couplings unacceptable.

2. Fittings for EMT. Compression-type.

2.4 **OUTLET BOXES AND COVERS**. UL 514A, cadmium- or zinc-coated, if of ferrous metal. UL 514C, if nonmetallic.

2.5 **CABINETS, JUNCTION BOXES AND PULL BOXES** (WITH VOLUME GREATER THAN 100 CUBIC INCHES). UL 50, hot-dip zinc-coated, if of sheet steel.

2.6 **WIRES AND CABLES**: Wires and cables shall meet the applicable requirements of NFPA 70 and UL for the type of insulation, jacket and conductor specified or indicated. Wires and cables manufactured more than 12 months prior to date of delivery to the site shall not be used.

A. Conductors. No. 10 AWG and smaller shall be solid: No. 8 AWG and larger shall be stranded. Conductors shall be copper, unless indicated otherwise.

B. Minimum conductor sizes: Minimum size for branch circuits shall be No. 12 AWG; for Class 1 remote-control and signal circuits, No. 14 AWG; and for Class 2 low-energy, remote-control and signal circuits, No. 16 AWG.

C. Color Coding: Provide for all service, feeder, branch, control, and signaling circuit conductors. Color shall be green for grounding conductors, and white for neutrals, except where neutrals of more than one system are installed in same raceway or box, the other neutral shall be white with a colored (not green) stripe. The color of the ungrounded conductors in different voltage systems shall be as follows: 120/208 volt, 3 phase: Phase A – Black; Phase B – Red; Phase C – Blue

D. Insulation: Unless specified or indicated otherwise or required by NFPA 70, all power and lighting wires shall be 600-volt, type THW, THWN, XHHW, or RHW, except that grounding wire may be Type TW; remote-control and signal circuits shall be Type TW, THW or TF. Conductors shall conform to UL 83. Where lighting fixtures require 90 degree C conductors, provide only conductors with 90 degree C insulation or better.

E. Bonding Conductors: ASTM B1, solid bare copper wire for sizes No. 8 AWG and smaller diameter; ASTM B 8, Class B, stranded bare copper wire for sizes No. 6 AWG and larger diameter.

2.7 **SPLICES AND TERMINATION COMPONENTS:**

UL 486A for wire connectors, and UL 510 for insulating tapes. Connectors for wire No. 10 AWG and smaller diameter wires shall be insulated, pressure-type in accordance with UL 486A or UL 486C (twist-on splicing connector). Provide solderless terminal lugs on stranded conductors.

Part 3 Execution

3.1 **INSTALLATION**: Electrical installations shall conform to requirements of NEPA 70 and to requirements specified herein.

A. Wiring Methods: Provide insulated conductors installed in conduit, except where specifically indicated or specified otherwise, or required by NEPA 70 to be installed otherwise. Provide insulated, green equipment grounding conductor in all feeder and branch circuits. Grounding conductor shall be separate from electrical system neutral conductor. Provide insulated, green conductor for grounding conductors installed in conduit or raceways. Minimum conduit size shall be ¾ inch in diameter for low voltage lighting and power circuits. Conduit which penetrates fire walls, fire partitions, or floors shall be metallic on both sides of fire walls, fire partitions, or floors for minimum distance of 6 inches.

1. Aluminum conduit. Use in exposed installation and in un-air-conditioned spaces.

   a. Do not install underground or encase in concrete.
   b. Do not use brass or bronze fittings.

2. Electrical Metallic Tubing. Use in dry partitions and above drop ceiling.

   a. Do not use in feeder circuits.
   b. Do not install underground.
   c. Do not encase in concrete.
   d. Do not use in areas where subject to severe physical damage (including, but not limited to, mechanical equipment rooms and electrical equipment rooms).
   e. Do not use in hazardous areas.
   f. Do not use in outdoor work.

B. Conduit installation: Unless indicated otherwise, conceal conduit within finished walls, ceilings, and floors. Keep conduit minimum 6 inches away from parallel runs of flues and steam or hot-water pipes. Install conduit parallel with or at right angles to ceilings, walls, and structural members where located above accessible ceilings and where conduit will be visible after completion of project.

1. Where conduits rise through floor slabs, the curved portion of bends shall not be visible above the finish slab.

2. Conduit Support: Support conduit by pipe straps, wall brackets, hangers, or ceiling trapeze. Fasten by wood screws to wood; by toggle bolts on hollow masonry units; by concrete inserts or expansion bolts on concrete or brick; by machine screws, welded threaded studs, or spring-tension clamps on steel work. Threaded C-clamps may be used on rigid steel conduit only. Do not weld conduits or pipe straps to steel structures. The load applied to fasteners shall not exceed one-fourth of the proof test load. Fasteners attached to concrete ceiling shall be vibration resistant and shock resistant. Holes cut to a depth of more than 1-1/2 inches in reinforced concrete beams or to a depth of more than ¾-inch in concrete joints shall not cut the main reinforcing bars. Fill unused holes. In partitions of light steel construction, use sheet-metal screws. In ceiling, run conduit above the ceiling. Where conduit crosses building expansion joints provide a suitable watertight expansion/deflection fitting that maintains the conduit electrical continuity by bonding jumpers or other means.

3. Make changes in direction of runs with symmetrical bends or cast-metal fittings. Make field-made bends and offsets with a hickey or conduit-bending machine. Do not install crushed or deformed conduits. Avoid trapped conduits. Prevent plaster, dirt, or trash from lodging in conduits, boxes, fittings, and equipment during construction. Free clogged conduits of all obstructions.

4. Install pull wires in empty conduit in which wire is to be installed by others. The pull wire shall be plastic having minimum 200-poind tensile strength. Leave a minimum 12 inches of slack at each end of the pull wire.

5. Fasten conduits to sheet metal boxes and cabinets with two locknuts where required by NFPA 70, where insulated bushings are used, and where bushings cannot be brought into firm contact with the box; otherwise, use minimum single locknut and bushing. Locknuts shall have sharp edges for digging into the wall of metal enclosures. Install bushings on the ends of conduits and provide insulating type where required by NFPA 70

6. Stub-Ups: Provide conduits stubbed up through concrete floor for connection to free-standing equipment with an adjustable top or coupling threaded inside for plugs, set flush with the finished floor. Extend conductors to equipment in rigid steel conduit, except that flexible metal conduit may be used 6 inches above the floor. Where no equipment connections are made, install screwdriver-operated threaded flush plugs in conduit end.

7. Flexible Connections: Provide flexible connections of short length, 6 feet maximum. Provide liquid-tight flexible conduit in wet locations. Provide separate ground conductor across flexible connections.

C. Boxes, Outlets and Supports: Provide boxes in the wiring or raceway systems wherever required for pulling of wires, making connections, and mounting of devices. Boxes for metallic raceways shall be of the cast-metal hub type when located in wet locations, when surface mounted on outside of exterior surfaces, when installed exposed up to 7 feet above interior floors and walkways, or when installed in hazardous areas. Boxes in other locations shall be sheet steel, except that aluminum boxes may be used with aluminum conduit; nonmetallic boxes may be used with nonmetallic conduit system. Each box shall have the volume required by NFPA 70 for the number of conductors enclosed in the box.

Boxes for use in masonry-block or tile walls shall be square cornered tile-type, or standard boxes having square-cornered tile-type covers. Provide gaskets for cast-metal boxes installed in wet locations and boxes installed flush with the outside of exterior surfaces. Fasten boxes and supports with wood screws on wood, with bolts and expansion shields on concrete or brick, with toggle bolts on hollow masonry units and with machine screws or welded studs on steel. In open overhead spaces, cast boxes threaded to raceways need not be separately supported except where used for fixture support; support sheet metal boxes directly from the buildings structure or by bar hangers. Where bar hangers are used, attach the bar to raceways on opposite sides of the box and support the raceway with an approved type fastener maximum 24 inches from the box. When penetrating reinforced-concrete members, avoid cutting any reinforcing steel.

1. Boxes for use with raceway systems shall be minimum 1-1/2, inches deep, except where shallower boxes required by structural conditions are approved. Boxes for other than lighting-fixture outlets shall be minimum 4 inches square, except that 4 inch by 2 inch boxes may be used where only one raceway enters the outlet.

2. Pull boxes: At least the minimum size required by NFPA 70 of code-gage aluminum or galvanized sheet steel, compatible with nonmetallic raceway systems, except where cast-metal boxes are required in locations specified herein. Furnish boxes with screw-fastened covers.

D. Conductor Identification: Provide conductor identification within each enclosure where a tap, splice, or termination is made. For conductors No. 6 AWG and smaller diameter, color coding shall be by factory-applied color-impregnated insulation. For conductors No. 4 AWG and larger diameter, color coding shall be by plastic-coated self-sticking markers, colored nylon cable ties and plates, or heat-shrink type sleeves. Identify control circuit terminations.

E. Splices: Make splices in accessible locations. Make splices in conductors No. 10 AWG and smaller diameter with an insulated pressure type connector. Make splices in conductors No. 8 AW and larger diameter with a solderless connector and cover with an insulation material equivalent to the conductor insulation.

F. Electrical Penetrations: Openings around electrical penetrations through fire resistance rated walls, partitions, floors, or ceilings shall be sealed to maintain fire resistive integrity as tested per ASTM E814.

G. Grounding and bonding: In accordance with NFPA 70. Ground all exposed non-current-carrying metallic parts of electrical equipment, metallic raceway systems, grounding conductor in metallic and nonmetallic raceways, and neutral conductor of wiring systems.

1. Grounding Conductor: Provide an insulated, green equipment grounding conductor in al feeder and branch circuits including lighting circuits. Grounding conductor shall be separated from the electrical system neutral conductor. Provide insulated, green conductor for grounding conductors installed in conduit or raceways.

H. Owner-Furnished Equipment: The Bidder shall make connections to Owner-furnished equipment to make equipment operate if possible to interface with existing government equipment.

3.2 **FIELD QUALITY CONTROL**: Furnish test equipment and personnel and submit written copies of test results to the Safety Administrator. Give five working days notice prior to each test.

A. Devices Subject to Manual Operation: Each device subject to manual operation shall be operated at least five times, demonstrating satisfactory operation each time.

Part 4 INTRUSION DETECTION SYSTEM (IDS)

4.1 Standard Products: Material and equipment shall be the standard products of a manufacturer regularly engaged in the manufacture of such products. Items of equipment shall essentially duplicate equipment that have been in satisfactory use at least 2 years prior to bid opening. Equipment shall be supported by successful bidder for a period of one (1) year from the time of acceptance by GDOE. Maximum response time for service shall be no more than one hour from the time a report is submitted.

4.2. System Description: Provide new intrusion detection system (IDS), including associated equipment and appurtenances. Provision of IDS shall include supervising installation of rigid or flexible conduit for IDS during site preparation, running system wires and cables, and system component installation, component testing, and system checkout. After functional testing and system acceptance by Safety Administrator, each system shall be complete and ready for operation. Equipment, materials, installation, workmanship, inspection, and testing shall be as specified herein. Include materials not furnished by the manufacturer with IDS equipment.

4.3 Submittals: The General Services Agency (GSA) and the involvement of other government agencies with the expertise to assist the GSA to review and approve submittals requiring special review.

Submittals shall include wiring diagrams and installation details of equipment indicating proposed locations, layout and arrangement, control panels, accessories, piping, ductwork, and other items that must be shown to ensure a coordinated installation. Wiring diagrams shall identify circuit terminals and indicate the internal wiring for each item of equipment and the interconnection between each item of equipment. Drawings shall indicate adequate clearance for operation, maintenance, and replacement of operating equipment devices. Submittals shall include the nameplate data, size and capacity. Submittals shall also include applicable federal, industry and technical society publication references.

Shop Drawings:
IDS Components
Overall system schematic

Product Data:
Interior point sensors
Interior volumetric (space) sensors
Control communicators
Keypad
Communication cables
Communications interface devices
Central station receiver
Central station printer
Sirens
Batteries
Tamper switches
Strobes

Test Reports:
IDS operational test plan

Certificates:
IDS operational test plan
Bidder's qualifications
Instructor's qualifications
IDS equipment

Operation and Maintenance Data:
IDS

Closeout Submittals:
As-Built drawings for IDS
Posted operating instructions for IDS
Product catalog and price list for future procurement needs

4.4 Quality Assurance:

A. Drawings

1. IDS Components: Provide drawings that clearly and completely indicate the function of each component of the IDS. Indicate termination points of devices and indicate interconnections required for operation of the system. Indicate interconnection between modules and devices. In addition, provide a layout drawing which shows spacing of components, location, and details of mounting and positioning.

2. Overall System Schematic: The overall system schematic shall indicate the sequence of operation, the relationship of integrated components on one diagram, and show power source, system controls, impedance matches, plus number, size, identification, and maximum lengths of interconnecting wires. Drawings shall not be less than 24 by 36 inches.

B. Experience and Qualifications:

1. Bidder's Qualifications: The Bidder must demonstrate a minimum of 3 consecutive and recent years' experience successfully installing IDS of the same or similar type and design as specified herein. Provide names, locations, on-going operational and maintenance costs, and points of contact of at least five installations of the same type and design as specified herein within the past 3 years where the installer has installed such systems. Indicate the type and quantities of each system and certify that each system has performed satisfactorily in the manner intended for a period of not less than 1 year.

2. Instructor's Qualifications: Prior to installation, submit data of the instructor's experience and certified qualifications. Show that the instructor, who will train operating and maintenance personnel, has received a min8imum of 24 hours of IDS training from al technical organization such as the National burglar and fire Alarm Association, and has 5 years' experience installing IDS of the type specified.

C. IDS Operational Test Plan: Bidder must submit for approval at least 30 days prior to commencement of formal operational testing an IDS testing plan. Include detailed procedures for comprehensive, operational testing of each IDS component and subsystem, and for performance of an integrated system test.

D. IDS Equipment: Submit manufacturer's certification of UL listing.

E. Regulatory Requirements: In each of the publications referred to herein, consider the advisory provisions to be mandatory, as though the word, "shall" had been substituted for "should" wherever it appears. Interpret references in these publications to the "authority having jurisdiction," or words of similar meaning to mean the Bidder. Equipment, materials, installation, and workmanship shall be in accordance with the mandatory and advisory provisions of NFPA 70 unless ore stringent requirements are specified or indicated.

1. Reference Standard compliance: Where equipment or materials are specified to conform to industry and technical society reference standards of the organizations such as American National Standards Institute (ANSI), American Society for Testing and Materials (ASTM), National Electrical Manufacturers Association (NEMA), Underwriters Laboratories (UL), and Association of Edison Illuminating Companies (AEIC), submit proof of such compliance. The label or listing by the specified organization will be acceptable evidence of compliance.

2. Independent Testing Organization Certificate: In lieu of the label or listing, submit a certificate from an independent testing organization, competent to perform testing, and approved by the Bidder. The certificate shall state that the item has been tested in accordance with the specified organization's test methods and that the item companies with the specified organization's reference standard. Provide only UL listed Security system equipment for both exterior and interior ESS sensors, access control, and closed-circuit television (CCTV) components.

F. Standard Products: Provide materials and equipment that are products of manufacturers regularly engaged in the production of such products which are of equal material, design and workmanship. Products shall have been in satisfactory commercial or industrial use for 2 years prior to bid opening. The 2-year period shall include applications of equipment and materials under similar circumstances and of similar size. The product shall have been on sale on the commercial market through advertisements, manufacturers' catalogs, or brochures during the 2-year period. Where two or more items of the same class of equipment area required, these items shall be products of a single manufacturer, however, the component parts of the item need not be the products of the same manufacturer unless stated.

1. Alternative Qualifications: Products having less than a 2-year field service record will be acceptable if a certified record of satisfactory field operation for not less than 6000 hours, exclusive of the manufacturers' factory or laboratory tests, is furnished.

2. Material and Equipment Manufacturing Date: Products manufactured more than 3 years prior to date of delivery to site shall not be used, unless specified otherwise.

4.5 Warranty: The equipment items shall be supported by service organizations in Guam in order to render satisfactory service to the equipment on a regular and emergency basis during the warranty period of the contract. . Equipment shall be supported by successful bidder for a period of one (1) year from the time of acceptance by GDOE. Maximum response time for service shall be no more than one hour from the time a report is submitted.

4.6 IDS Subsystems:

Provide a complete integrated IDS consisting of the following major subsystems:

Detection
Arm/disarm multiple function keypad
Communications
Assessment
Alarm reporting
Power

4.7 Integrated System Functional Requirements: Ensure that the IDS is fully integrated with the physical security and other elements of the overall facility security system. Except for multiple function keypads, other subsystems may be housed in a single enclosure. Specific subsystem functional requirements are as follows:

- Detection subsystem: Subsystem shall consist of sensors to detect intrusion attempts.
- Arm/disarm multiple function keypad: Subsystem shall consist of electronic digital keypads to monitor and control personnel movement through and between protected areas within the facility.
- Communications subsystem: Subsystem shall consist of elements required to ensure that pertinent data is transferred from the point of origin to the point where appropriate actions can be taken.
- Assessment subsystem: Subsystem shall consist of electronic devices required to visually and audibly verify the validity of IDS alarms.
- Alarm reporting subsystem: Subsystem shall consist of electronic devices to control, process integrate and annunciate IDS data.
- Power subsystem: Subsystem shall consist of components required to ensure continuous operation of the entire IDS.

4.8 Integrated System Performance Requirements: The installed and operating IDS shall be integrated into the overall facility to detect intrusion and shall perform as an entity, as specified below:

A. Detection Coverage: Provide and adjust sensors so that coverage is maximized without mutual interference. IDS coverage shall include critical spaces within the facility.

B. Detection Resolution (sensitivity): Sensitivity shall be capable of the following:

1. Locating intrusions at individually protected assets and/or at an individual portal;

2. Locating intrusions within volume/areas to within the coverage on any single volumetric sensor; and

3. Locating failures and/or tampering at individual sensors.

C. Detection alarm and Reporting Capacity: The IDS shall have the capacity to collect, communicate, and display minimum of eight (8) programmable sensor Zone alarms and to enable control of one (1) or more response devices in each of the sensor zones. When a sensor zone includes a combination of multiple detection devices, the system shall maintain the capability to identify individual detection devices in an alarm state. A single alarm shall be annunciated within approximately two (2) seconds after sensor transducer or other detection device activation.

D. Alarms: alarm shall include, but not be limited to, the following:

Intrusion detection
Tamper
Fail-safe
Line fault
AC power loss
Low battery in control communicator.

1. Intrusion Detection: Sense and respond with visible and audible signals the activation of detection sensors.

2. Tamper: Tamper protection can be physical protection, line supervision, encryption, and tamper alarming of enclosures and components. All intrusion detection, access control, assessment systems and their associated data transmission media must be protected commensurate with the classification of asset being protected. All intrusion detection sensors and access control readers must have tamper resistant enclosures and integral tamper protection switches. All enclosures, cabinets, housing, and boxes, having hinged doors or removable covers that contain processors or connections must have tamper protection switches. All tamper alarm signals must be monitored continuously whether the system is in the access or secure mode of operation. Tamper alarms shall be annunciated to be clearly distinguishable from intrusion detection alarms. Tamper switches on doors which must be opened to make normal maintenance adjustments to the system and to service the power supplies shall be of the push/pull-set, automatic-reset type. Tamper switches shall have the following features:

a. Inaccessibility until the switch is activated;
b. Under electrical supervision at all times, irrespective of the protection mode in which the circuit is operating;
c. Spring-loaded and held in the closed position by the door or cover protected; and
d. Wired to break the circuit when the door or cover is disturbed.

3. The system shall provide capability in critical elements of the IDS, including, but not limited to, the capability to monitor communication link integrity and to provide self-testing. When diminished functional capabilities are detected, the system shall provide annunciation of the fault. Alarms shall be annunciated to be clearly distinguishable from other types of alarms.

4. As a minimum, fault isolation at the systems level shall have the same geographic resolution as provided for intrusion detection. Communication links of the ISD shall have an active mode for line fault detection. The system shall be either a static system or a dynamic system. In a static system, the "no-alarm" condition shall always be represented by the same signal, which shall be different that the signal originally transmitted. The dynamic system shall represent "no-alarm" with a signal which continually changes with time.

5. The system shall have the capability to detect when a critical component experiences temporary or permanent loss of power and to declare an alarm. The alarm shall be annunciated to clearly identify the component experiencing power loss.

E. Electrical power shall be obtained by the normal commercial electrical distribution system. Power shall be continuously monitored and, if interrupted, automatic switching from primary to emergency backup sources shall be accomplished without interruption or degradation of critical system function. Intrusion alarms shall not be generated by power switching; however, an indication of power switching and on-line source shall be provided at the alarm monitor. Upon restoration of prime power, the system shall automatically switch back to the primary source. Low voltage condition of an on-line battery and battery charger circuit failure shall be detected and reported as a fault condition.

1. Primary Power: Furnish 120 volt AC service, transformed through a two-winding isolation transformer and rectified to low-voltage DC for system operation. Obtain primary power at the location indicated. Provide a circuit dedicated to power IDS from a panel-board at the location indicated. Label the circuit breaker in that panel-board: "Alarm System Do Not Turn Off."

2. Backup Power: Provide backup power to the primary power by dedicated batteries in remotely located system elements such as individual sensors and in control communicators. Batteries shall be capable of operation in any position and shall be protected against venting caustic chemicals or fumes within an equipment cabinet. Batteries shall also be capable of continuous operation for up to 8 hours without recharge or replacement. If the sensors power requirements exceed the allowable UL rated capacity of the control communicator battery, provide the number of separate power supplies required to power the sensors. Provide each power supply with its own rechargeable battery and charger.

4.9. System Performance Requirements: Provide commercial of the shelf (COTS) system components to operate as described herein within the context of the integrated system performance previously described. Where inconsistencies occur between the following component performance requirements and integrated system level performance descriptions, integrated system performance descriptions shall take precedence.

A. Modularity: Provide system components to facilitate modular subassembly and part replacement. Electronic components of the system shall be of the solid-state type, mounted on printed circuit boards conforming to UL 796. Circuitry shall not be so densely placed as to impede maintenance. Power-dissipating components shall incorporate safety margins of not less than 25 percent with respect to dissipation ratings, maximum voltages, and current-carrying capacity. Light duty relays and similar switching devices shall be solid-state or hermetically sealed electromechanical type.

B. Reliability: Provide only components in current manufacturing production. Components shall be manufactured to meet requirements specified herein and shall be free from characteristics and defects which affect appearance or serviceability or which render equipment unsuitable for the intended purpose. Provide components designed for continuous operation at specified conditions.

C. Maintainability: Components shall be capable of being maintained using commercially available standard tools and equipment. Components shall be arranged and assembled to be readily accessible to maintenance personnel without compromising the defeat resistance of the IDS.

D. Environmental Conditions:

1. Interior Conditions: Equipment installed in environmentally protected interior areas shall meet performance requirements specified by UL for the specific equipment or device.

2. Exterior Conditions: Components mounted in locations exposed to weather shall be housed in corrosion-resistant enclosures with appropriate environmental protection. Component performance shall not degrade because of improper housing design. Components in enclosures shall meet performance requirements when exposed to ambient conditions specified by UL for the specific equipment or device.

3. Transient voltage surge suppression: Intrusion detection and communication circuits shall be protected at both ends against transient voltage surges. Transient voltage surge suppressors (TVSS) or surge protection devices (SPD) are required for the protection, within specified limits, of AC electrical circuits and electronic equipment from the effects of lightning induced voltages, external switching transients and internally generated switching transients.

E. Electromagnetic Interference (EMI): IDS components employing electromagnetic radiation shall be designed and constructed to provide maximum practical invulnerability to electronic countermeasures.

F. Electromagnetic Radiation (EMR): Provide only IDS components which are FCC licensed and approved. Provide system components which are electromagnetically compatible.

G. Interchangeability: Like components shall be physically and functionally interchangeable as complete items, without modification of either the original items or of other components with which the items are used.

H. Safety: IDS components shall conform to application rules and requirements of NFPA 70 and applicable Underwriters Laboratories publications.

I. Human Engineering: Aural considerations shall include location of annunciators, tone pitch, quality, and intensity. The number of different audible signals shall not exceed four. Component design shall provide for ease of accessibility for maintenance.

1. Visual Annunciators: Annunciators shall be either liquid crystal displays (LCDs) or light emitting diodes (LEDs). Annunciators shall be so connected in the circuit that failure of the annunciator, socket, or protective circuitry shall not result in an improper or indeterminate signal. LCDs and LEDs shall be compatible with standby power supplies. LEDs shall be brightly lit and visible from a distance of 30 feet in an area illuminated at 75 foot candles. LEDs shall be used in outdoor applications or in the presence of sunlight.

2. Controls: Provide to ensure ease of operation of specified characteristics. Where applicable, clockwise rotation of controls shall result in an increasing function. Controls, switches, visual signals, and indicating devices, input and output connectors, terminals, and test points shall be clearly marked or labeled on hardware to permit quick identification, intended use, and location.

Terminal markings and labels shall be of a permanent and legible type and located to be visible when the associated system wiring is in place. Identification markings shall be associated with each adjustment device or item requiring periodic maintenance. Safety warning or cautions shall be marked in conspicuous red letters. Control and indicator identifications that are exposed outside enclosures shall be permanent, machine-engraved letters, and painted to contrast with the background color. Controls not required for operation of the system shall be inaccessible to the system operator.

J. Test Points: Test points, controls, and other adjustments inside enclosures shall be readily visible and accessible with minimum disassembly of equipment. Test points and other maintenance controls shall not be readily accessible to operator personnel.

K. Component enclosures: Annunciator housings, power supply enclosures, sensor control and terminal cabinets, control communicators, wiring gutters, and other component housings, collectively referred to as enclosures, shall be formed and assembled to be sturdy and rigid.

1. Metal Thickness: thicknesses of metal in cast and sheet metal enclosures of all types shall not be less than those in Tables 8.1, 8.2, and 8.3 of UL 1610 for alarm components, and NEMA ICS 2 and NEMA ICS 6 for other enclosures.

2. Doors and Covers: doors and covers shall be flanged. Where doors are mounted on hinges with exposed pins, hinges shall be of the tight-pin type, or ends of hinge pins shall be tack welded to prevent ready removal. Provide doors having a latch edge length of less than 24 inches with a single lock. Where the latch edge of a hinged door is 24 inches or more in length provide the door with a three-point latching device with lock; or alternatively with two locks, one located near each end. Covers of junction boxes provided to facilitate initial installation of the system shall be held in place by tack welding, brazing, or one-way screws.

3. Ventilation: Ventilation openings in enclosures and cabinets shall conform to the requirements of UL 1610.

4. Mounting: Unless otherwise indicated, sheet metal enclosures shall be designed for wall mounting with top hole slotted. Mounting holes shall be in positions which remain accessible when major operating components are in place and the door is open, but shall be inaccessible when the door is closed.

5. Enclosure Locks: Locks and key-lock-operated switches required to be installed on component enclosures shall be UL listed, round-key type with three dual, one mushroom, and three plain pin tumblers, or shall have a pick resistance equal to a lock having a combination of five cylinder pin and five-point three-position side bar in the same lock. Keys shall be stamped "DO NOT DUPLICATE." Key-lock-operated switches shall be keyed differently and shall be two-position, with the key retractable from either position. Furnish two (2) keys for each switch. Maintenance locks shall be of the one-way key-pull type arranged so that the key can be withdrawn only when the lock is in the locked position. Locks on components for maintenance access shall be keyed alike; furnish only two (2) keys for such locks. Deliver keys, tagged with metal tags, accompanied by a manufacturer's certificate which records the number of each key made.

L. Detection Sensors: sensors shall detect penetration of protected zones by unauthorized personnel or intruders, and shall conform to UL 634 or UL 639, as applicable. Unless otherwise specified, required sensor power shall be plus 12 volts DC.

1. Interior Point Sensors:

a. Door and window open detection:

(1). Magnetic Switches: Magnetic switches shall be surface mounted or recessed. Magnetic switches shall have a magnetic field with a high probability of alarm if an external magnet is introduced in defeat attempts. Provide each magnetic switch with an over current protective device, rated to limit current to 80 percent of switch capacity. The magnetic switch housing shall be protected from unauthorized access by encapsulating reed switches in a polyurethane potting compound. The magnetic switch shall have a tamper resistant enclosure and integral tamper switch. Magnetic switch shall be rated for a minimum lifetime of one million operations. House magnetic switch components in enclosures made of nonferrous materials.

(2). Surface mounted magnetic switches: House components used in outdoor applications in weatherproof enclosures. The switch mechanism shall have a minimum gap of ¾ inch and a maximum gap of 2 ½ inches without internal adjustment. The housing for surface mounted magnetic switches, if made of cast aluminum, shall be secured by stainless steel screws. The magnetic switch shall have a tamper resistant enclosure and integral tamper switch. Conductors running from the door to alarm circuits shall be jumpered within a flexible armored cord constructed from corrosion-resistant metal. Each end of the armored cord shall terminate in a junction box or other enclosure. Armored cord ends shall be mechanically secured to junction boxes by clamps or bushings. Conductors within the armored cord shall be provided with lug terminals at each end. Jumpered conductors and the armored cord shall experience no mechanical strain as the door is removed from fully open to closed. The switch circuit shall initiate an alarm if a short circuit is applied to the door cord.

(3). Recessed magnetic switches: The recessed magnetic switches shall have a gap up to ½ inch in steel. Field adjustments in the fixed space between magnet and switch housing shall not be possible.

a. Glass breakage detection:

(1) Glass breakage sensors: Sensors shall detect window breakage by responding to sonic or vibration frequencies that accompany breaking glass. Sensors shall selectively filter input to detect only frequency of breaking glass and to minimize false alarms from sources such as jangling keys, ringing phone, and slamming doors. Glass breakage sensors shall initiate alarm when the glass they protect is cracked or broken. Sensors shall provide positive detection of breakage of plate, safety, laminated, and tempered glass. Sensor shall have a sensitivity adjustment controlling the output voltage from the detecting element which triggers a solid-state latching device. Provide the sensor with an LED for adjusting the sensitivity Sensor shall be contained in a fire-resistant ABS plastic housing and shall be ceiling or wall mounted, as indicated Sensor shall provide 100% coverage of large glass areas. Sensor housing shall be tamper resistant and designed for screw mounting. Sensor shall not initiate alarm in response to seismic vibrations or other ambient stimuli. The sensor shall have a tamper resistant enclosure and integral tamper switch.

(2) Dual technology glass-break sensor: Sensor shall detect window breakage by responding to acoustic frequencies that accompany breaking glass. The sensor shall be combined with a passive infrared motion detector (PIR) for the purpose of eliminating occupant-generated false alarms. It will extend coverage to occupied areas, allowing the sensors to be armed while people are present. The sensor shall have a tamper resistant enclosure and integral tamper switch.

(3) Recessed glass-break sensor: A recessed glass-break sensor is to be used when appearance is a consideration. Recessed models can be mounted directly to the wall or ceiling or can be installed on a single gang box. The sensor shall employ pattern recognition technology that listens for the actual pattern of breaking glass. The sensor shall be able to detect the difference from breaking glass and normal room sounds by listening across the glass-break frequency spectrum. The sensor shall provide 25 feet 360 degree coverage of the area to be protected. The sensor shall have a tamper resistant enclosure and integral tamper switch.

M. Interior Volumetric (Space) Sensors:

a. Passive infrared (PIR) sensors: Sensors shall detect intruder presence by monitoring the level of infrared energy emitted by objects within a protected zone. Sensor shall initiate an alarm upon observing increased or fluctuating infrared energy caused by the presence and motion of an intruder whose temperature is as little as 3 degrees F different from the background temperature. Sensor shall be passive in nature; no transmitted energy shall be required for detection. Sensor shall be sensitive to infrared energy emitted at wavelengths corresponding to the human body and other objects at ambient temperatures. Detection pattern for wall-mounted sensors shall be 50 feet by 50 feet, unless otherwise indicated. Detection pattern for ceiling-mounted sensors shall be 360 degrees, unless otherwise indicated and have a tamper resistant enclosure and integral tamper switch. Sensor shall provide some means of indication an alarm condition during installation and calibration. A means of disabling the indication shall be provided within the sensor enclosure. Sensor shall alarm if an intruder moves within the area of protection more than 5 feet at a velocity of 0.1 foot per second, and one step per second, assuming 6 inches per step. Detection sensitivity shall be irrespective of the direction of motion. Sensor shall also alarm at velocities faster than 0.1 foot per second, up to 10 feet per second. Sensor optimum detection range shall be a minimum of 35 feet. Sensor shall not alarm in response to general area thermal variations. Sensor shall have RFI and white light immunity.

b. Dual technology sensors: Provide sensor combining passive infrared and microwave sensors designed and manufactured specifically to be mounted in a single enclosure.

(1) Passive infrared (PIR) sensor section: Sensor shall detect intruder presence by monitoring the level of infrared energy emitted by objects within a protected zone. Sensor shall initiate an alarm upon observing increased or fluctuating infrared energy caused by the presence and motion of an intruder whose temperature is as little as 3 degrees F different from the background temperature. Sensor shall be passive in nature; no transmitting energy shall be required for detection. Sensor shall be sensitive to infrared energy emitted at wavelengths corresponding to the human body or other objects at ambient temperatures. Sensor detection pattern shall be 50 feet by 50 feet, unless otherwise indicated. Sensor shall come with clip-on mirror inserts that allow the choice of deferent coverage patterns: full and center curtain. Sensor shall have RFI and white light immunity. The sensor shall have a tamper resistant enclosure and integral tamper switch.

(2) Additional dual technology sensor requirements: The enclosure containing two sensor sections shall be tamper alarmed. Both microwave and PRI sections shall activate simultaneously to generate an alarm. Only an intrusion characterized by volumetric motion and radiant body heat shall be detected. Sensor shall provide some means of indicating an alarm condition during installation and calibration. A means of disabling the indicator shall be provided within the sensor enclosure. Sensor shall alarm if an intruder moves within the area of protection more than 5 feet at a velocity of 0.1 foot per second, and one step per second, assuming 6 inches per step. Detection sensitivity shall be irrespective of the direction of motion. Sensor shall also alarm at velocities faster than 0.1 foot per second, up to 10 feet per second. Sensor shall not alarm in response to general area thermal variations. Mount sensors near the ceiling on vibration-free surfaces. Electronic circuitry shall be solid state and mounted on printed circuit boards. Sensor elements shall contain circuitry for transmitter drive, signal processing, tamper circuitry, and power supplies. Circuitry shall provide an alarm relay with Form C contacts capable of carrying 2 amperes at 100 volts DC minimum. The sensor shall have a tamper resistant enclosure and integral tamper switch.

N. Communications: Communications shall link together the subsystems of the IDS. IDS communications links shall be via hardwire cable. Communications links shall be supervised. Common communications interface devices shall be provided throughout the IDS. Sensor to Premise Control Unit (PCU) interface shall be by dry relay contact normally open or normally closed, except as specified otherwise. PCU to central alarm reporting Digital Receiver shall be digital, asynchronous or multiplexed data. The system shall be capable of communication using the IBM Synchronous Data Link Control format, and at least two other standard industry formats. The system shall be capable of supporting Network communication with digital dialer backup, existing Ethernet or token ring data networks, satellite communication, fiber optic networks, local area networks, wide area networks, cellular communication, and retail data networks. The PCU shall be capable of asynchronous network communication with a retry time between 3 and 15 seconds for a total of one (1) minute. If communication is unsuccessful the PCU shall be capable of attempting backup communication through any of the available communication methods to the same receiver or a backup receiver. Network communication between the PCU and the receiver shall be in a proprietary communication format. The PCU shall be capable of supporting Dynamic Host Communication Protocol (DHCP) Internet Protocol (IP) addressing. Underwriters Laboratories (UL) shall list network communication by the PCU for Grade AA High-Line Security. The PCU shall be capable of two-way network communication using standard Ethernet 10Base T in a LAN, WAN, or Internet configuration. The PCU shall be capable of communication by means of a 128 Bit AES Rijndael Encryption process certified by NIST (National Institute of Standards and Technology) to a digital receiver with a built-in Encryption Alarm Router. The PCU shall be capable of meeting DCID 6/9 and UL 2050 standards. The PCU shall be capable of having communication set to Network operation. When a trap is set in remote Link, the software receiver. The digital receiver shall store the trap and monitor the PCU for the next message. When the PCU sends its next message, the receiver shall then send a message to the PCU to contact Remote Link at the IP address contained in the original trap message. The trap message shall be stored in the digital receiver for up to four hours. If the trap message is not sent to the PCU within the four-hour window, the PCU trap message shall be discarded and a new trap message must be sent from Remote Link.

1. Sensor to PCU Link Supervision: Provide hardwire direct current line supervision for sensor to PCU links which are within the DIS protected area. Circuit shall be supervised by monitoring changes in the current that flows through the detection circuit and a terminating resistor of at least 1.0 kohm. Supervision circuitry shall initiate an alarm in response to opening, closing, shorting, or grounding of the conductors by employing Class C, Standard Line Security. Class C circuit supervisor units shall provide an alarm response in the annunciator in not more than one second as a result of the following changes in normal transmission line current.

   a. Five percent or more in normal line signal when it consists of direct current from 0.5 milliamperes through 30 milliamperes.

   b. Ten percent or more in normal line signal when it consists of direct current from 10 microamperes to 0.5 milliamperes.

   c. Five percent or more of any element or elements of a complex signal upon which security integrity of the system is dependent. This tolerance will be applied for frequencies up to 00 Hz.

   d. Fifteen percent or more of any element or elements of a complex signal upon which security integrity of the system is dependent. This tolerance will be applicable for frequencies above 100 Hz.

2. Control Communicator Hardwire Link: The control communicator to central alarm reporting processor communications link shall operate over a maximum of 4 standard voice grade telephone leased or proprietary lines. Digital communicator shall conform to UL 1635. The link shall be capable of operating half duplex over a type 3002 data transmission pair and shall be capable of modular expansion. Telephone lines will be provided by the GDOE. Coordinate and check out system operation. General characteristics and telephone line service shall be as follows:

a. Connections: Two- or four-wire
b. Impedance at 1000 Hz: 600 ohms
c. Transmitting level: 0 to 12 dBm
d. Transmitting level adjustment: 3 dB increments
e. Type: Data
f. Direction: Two-way alternate (half duplex)
g. Maximum speed: 1.2
h. Maximum loss at 1000 Hz: 33 dB.

O Premise Control Unit (PCU): PCU shall include a command processor installed in an attached and tamper resistant enclosure. The PCU shall be packaged and include a power transformer, battery(s), network connection cable, keypad(s), keypad connection cable(s) and additional components as required. All system electronic components shall be solid-state type, mounted on printed circuit boards. Light duty relays and similar switching devices shall be solid-state type or electromechanical. The PCU shall have an over current notification LED that lights when devices connected to the Keypad Bus or communication Bus(es) draw more current than the PCU is rated for. When the over current LED lights, the communications Bus(es) and Keypad bus are to shut down. The PCU shall provide at a minimum but not limited to, the following capabilities:

a. The PCU areas and zones shall be programmable, and the system shall store, log, display, and transmit specific custom designations for system areas, zones, and user names.

b. The system shall support user interaction by way of a keypad, web browser, system software, key switch, or radio frequency wireless control, using integrated or auxiliary devices provide by the system manufacturer.

c. The PCU shall support zone input connections, system keypads, system zone expansion modules, and wireless zone input modules, and must support zone input connections by way of at least two competitive products. The system shall offer a seamless integrated compatibility with hard-wire and/or wireless zone expansion equipment for a t least 200 wireless zones and/or a maximum of 550 hardwired zones.

d. The PCU shall be capable of offering at least 5 zone expansion buses, each of which can support the connection of up to 15,000 feet of four-wire cable. Zone expansion and keypad data buses that exceed 2,500 feet of cable must include splitter/repeater modules to boost data voltage and maintain data integrity.

e. The PCU shall provide a seamless capability to provide a minimum of 500 addressable relays, which can be located at any connection location upon a zone expansion bus.

f. PCU relay outputs shall have the capability of being triggered as a result of a command from the user interface, changes in system status, changes in zone status, or by a programmable schedule.

g. PCU relay output states shall be programmable for momentary, maintained, pulsed, or must follow the state of an associated zone input.

h. The PCU shall be completely programmable either locally from a keypad or remotely through a standard dial-up, and network connections by way of a LAN, WAN, and/or by way of the Internet. Remote configuration or control is not permissible for installation that must conform to DCID 6/9 requirements.

i. The PCU shall be completely programmable remotely using remote annunciators, and/or using upload/download software that communicates using SDLC 300 baud, 2400 baud, or IP Addressed data network. On-site programming from a personal computer shall also be permitted. Remote configuration or control is not permissible for installation that must conform to DCID 6/9 requirements.

j. The PCU shall be equipped with an anti-reversing circuit breaker to prevent damage due to accidental reversal of battery leads.

1. Input/Output Capacity:

   a. The PCU shall be capable of monitoring a maximum of 550 individu8al zones and controlling a maximum of 500 output relays.

   b. The PCU shall have, as an integral part of the assembly, 2 SPDT Form C relays rated at 1 Amp at 30 VDC and four open collector 12 VDC outputs rated at 50mA each. It shall also have the capacity of a maximum of 125 output expander modules with 500 switched ground, open collector outputs, 50mA maximum and 502 auxiliary relays (Form C rated at 1.0 Amp at 30 VDC).

   c. The PCU shall also provide 100 programmable output schedules, and include an integral bell alarm circuit providing at least 1.5 Amps of steady, pulsed, or temporal bell output. Output type shall be programmable by zone type. Relays and voltage outputs shall be capable of being independently programmed to turn on and/or off at selected times each day.

2. User/Authorization Level Capacity: The system shall be capable of operation by 10,000 unique Personal Identification Number (PIN) codes with each code having one (1) of ninety-nine (99) custom user profiles. This allows for limitation of certain functional to authorized users. The operation of all keypads shall be limited to authorized users.

3. Keypad:

   a. The PCU shall support a maximum of sixteen 16 keypads with alphanumeric display. Each keypad shall be capable of arming and disarming any system area based on a pass code authorization. The keypad alphanumeric display shall provide complete prompt messages during all stages of operation and system programming and display all relevant operating and test data.

   b. Communication between the PCU and all keypads and zone expanders shall be multiplexed over a non-shielded multi-conductor cable, as recommended by the manufacturer. This cable shall also provide the power to all keypads, zone expanders, output expanders, and other power consuming detection devices.

   c. If at any time a keypad does not detect polling, the alphanumeric display shall indicate "SYSTEM TROUBLE". If at any time two devices are programmed for the same address, the alphanumeric keypad shall display "4 WIRE BUS TROUBLE". If at any time a keypad detects polling but not for its particular address, the alphanumeric display shall indicate "NON POLLED ADDR". The system shall display all system troubles at selected keypads with distinct alphanumeric messages.

   d. The keypad shall include self-test diagnostics enabling the installer to test all keypad functions: display test, key test, zone test, LED test, relay test, tone test, and address test.

e. The keypad shall provide an easy-to-read English text display. The text shall exactly match the text seen in all software reports, keypad displays, and central station reports.

f. The keypad user interface shall be a simple-to-use, menu-driven help system that is completely user friendly.

g. The PCU shall support sub-control keypads with four 4 built-in zones and capable of functioning in the following modes:

1. Monitors all for 4 keypad zones independently with a maximum of 125 keypads attached to the PCU.

2. PCU assigns one 1 zone to each keypad and monitors all keypad zones as a single zone with a maximum of 500 keypads attached to the PCU.

3. Stand-alone mode allowing keypad to operate as a self-contained security system independent of the PCU.

4. Zone Configuration:

a. A minimum of 4 Class B ungrounded zones shall be available at each keypad or zone expander on the system. The system shall have the capacity for a maximum of sixteen 16 keypads and a maximum of 125 four (4) zone expanders or 500 single zone expanders. It shall also have the capacity of a maximum of 125 supervised relay output expanders. All class B zones shall be 2-wire, 22 AWG minimum, supervised by an end-of-line (EOL) device and shall be able to detect open and short conditions in excess of 500ms duration.

b. Each zone shall function in any of the following configurations: Night, Day, Exit, Fire, Supervisory, Emergency, Panic, Auxiliary 1, Auxiliary 2, Fire Verification, Cross Zone, Priority, and key switch Arming.

c. The digital SLCs and the annunciator/keypad bus shall be able to operate at a maximum wiring distance of 2500 feet from the control panel on unshielded, non-twisted cable. This distance may be extended to a total of 15,000 feet when bus repeater modules are installed.

d. The PCU shall have the capability to incorporate up to 200 zone expander points.

P. Siren:

a. Siren: Provide 30 watt, 8 ohm speaker and siren driver rated for 6 to 12 vilts DC and having two distinct sound outputs. Siren shall produce a sound level output of 103 to 106 dB at 3050 mm 10 feet. Siren shall conform to UL 464 and UL 609, as applicable. Provide siren in metal enclosed, weather-resistant box having tamper switches on front cover and on back of box.

b. Chime: Provide for keypad audible indication of a device activation. Audible chime shall sound when select devices activate in order to alert personnel of access into an area during normal access times. The audible chime may be activated when a magnetic switch is activated at a main entrance leading into an un-secured area during working hours.

P. Strobes: Provide for visual indication of alarm activation: Strobe shall flash simultaneously with siren and shall be 75 candela minimum with flash rate of 60 minute. Strobe shall be designed to operate on 12 volts DC and shall conform to UL 1638.

Q. Central Station Receiver/Printer: Provide a microprocessor based digital alarm receiver conforming to UL 1610 to receive and display information transmitted by alarm control panels/communicators over the standard telephone network. Receiver shall be capable of handling Ademco low or high speed, Sescoa, Radionics, and BFSK formats with either three- or four-digit subscriber identification and four plus two formats on the same line card. Receiver shall have built-in battery backup and shall be able to monitor a minimum of 999 accounts. Telephone connection shall be RJ31X jack. AC input shall have built-in MOV surge protection.

1. Printer: Printer shall conform to UL 1610 and shall provide a hard copy record of incoming information including time, date, account number, and code number. Printer shall have built-in battery backup and built-in MOV surge protection on AC input. Clock shall be 24-hour real time. Calendar shall be 100 year with leap years built in.

2. Operation: When the receiver receives a transmission over standard telephone network lines from a remote communicator, the receiver shall immediately answer the incoming call and acknowledge the call by returning a tone signal (handshake) to the communicator. Upon receipt of the handshake, the communicator shall transmit one or two rounds of coded pulses which are the account and code numbers. When a valid statement of data is received from the communicator, the receiver's internal audible signal shall sound to alert the monitoring person that a valid round of data is on line. The receiver shall also alert the printer and shall display on the receiver's front panel the account number and code number of the communicator. When the receiver has received the communicator's data, the receiver shall send a signal to the communicator causing the communicator to hang up (kiss off). The receiver shall then automatically shut itself down within 10 seconds.

R. Standalone Electronic Door Access: The PCU shall be capable of integrating area access control capability where specified into the same PCU with the ability to have up to 10,000 user credentials. User access is limited to custom profiles and/or schedules. Anti-passback shall be available. Networked version shall support a Two-Man rule feature. The system shall support up to sixteen 16 access doors, connected to the system using a manufacturer-approved interface module. Access Control equipment shall communicate to the system by way of the PCU keypad bus.

4.10 Field Fabricated Nameplates: ASTM D709. Provide laminated plastic nameplates for each equi0ment enclosure, relay, switch, and device. Each nameplate inscription shall identify the function and, when applicable, the position. Nameplates shall be melamine plastic, 0.125 inch thick, white with black center core. Surface shall be matte finish. Corners shall be square. Accurately align lettering and engrave into the core. Minimum size of nameplates shall be 1 by 2.5 inches. Lettering shall be a minimum of 0.25 inch high normal block style.

A. Manufacturer's Nameplate:

Each item of equipment shall have a nameplate bearing the manufacturer's name, address, model number, and serial number securely affixed in a conspicuous place; the nameplate of the distributing agent will not be acceptable.

4.11 Factory Applied Finish: Electrical equipment shall have factory-applied painting systems which shall, as a minimum, meet the requirements of NEMA 250 corrosion-resistance test.

4.12 Execution: Equipment Installation: UL 609, UL 639, UL 681, UL 1076, and UL 1610, and the appropriate installation manual for each equipment type. Components within the system shall be configured with appropriate "service points" to pinpoint system trouble in less than 20 minutes.

A. Cable/Wire Runs: NFPA 70 and as specified herein.

B. Soldering: ASTM B32. For soldering electrical connections, use composition Sn60, for general purposes; use composition Sn62 or Sn63, for special purposes. Flux shall conform to ASTM B32.

C. Galvanizing: Ferrous metal shall be hot-dip galvanized in accordance with ASTM A123/A123M. screws, bolts, nuts, and other fastenings and supports shall be corrosion resistant.

D. Tamper Switches: Tamper switches shall be an integral part of all intrusion sensor devices. An initiation of an alarm signal will occur when the door or cover is moved as little as ¼ inch from the normally closed position. Tamper switches shall also be located within enclosures, cabinets, housings, boxes, raceways, and fittings to prevent direct line of sight to any internal components and to prevent tampering with switch or circuitry. Conceal tamper switch mounting hardware so that the location of the switch within the enclosure cannot be determined from the exterior.

E. Fungus Treatment: Completely treat system components for fungus resistance; treating materials containing mercury-bearing fungicide shall not be used. Treating materials shall not increase the flammability of the material or surface being treated nor cause skin irritation or other personnel injury during fabrication, transportation, operation, or maintenance of the equipment, or during use of the finished items when used for the purpose intended.

F. Conduit: Install in accordance with NFPA 70.

4.13 Field quality Control:

A. IDS Operational Test Plan: Tests shall ensure that the requisite degree of intrusion detection is provided. Initially, test each sensor and subsystem component individually. Test glass breakage sensors by using test units supplied by the manufacturer which simulate glass breakage. When the function of each component within a particular subsystem, such as each sensor within a particular zone, is verified, certify that subsystem of the entire IDS has satisfactorily met the specifications. Test each subsystem similarly until each detection zone has been certified. When subsystem certification is complete, test the entire integrated system to ensure that the subsystem elements are compatible and function as a complete system. The integrated system test shall be accomplished in linear fashion, end-to-end, and shall verify that each simulated intrusion performed within each detection zone produces an appropriate alarm or signal, and that alarm is correctly annunciated at the keypad and central station receiver. Provide for approval, not later than 30 days prior to formal inspection and test, a detailed operational test plan of how each component, subsystem, and entire IDS will be tested. When tests are complete and corrections made, submit a signed and dated certificate with a request for formal inspection and tests.

B. System Acceptance Test:

1. Posted Operating Instructions: System Acceptance testing shall be performed as follows:

   a. The GDOE will participate in final acceptance testing of the system.

   b. Prior to the final acceptance test, security contractor shall conduct a complete test of the entire IDS system and provide the GDOE with a written report.

   c. Following completion of the initial testing and correction of any noted deficiencies, conduct a five-day burn-in test; intent of the burn-in test shall be to prove the IDS by placing it in near real operating conditions. During this period the IDS shall be fully functional and programmed such that all points, interfaces, controls, reports, messages, prompts, etc. can be exercised and validated. Record and correct any system anomaly, deficiency, or failure noted during this period. Scheduling of the final acceptance test shall be based on a review of the results of this burn-in test.

d. Deliver a report describing the results of the functional tests, burn-in test, diagnostics, calibrations, corrections, and repairs including written certification to the GDOE that the installed complete IDS has been calibrated, tested, and is fully functional as specified herein.

e. Prior to the final acceptance test, complete all clean-up and patch work requirements. Security equipment rooms/spaces and similar areas shall be free of accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, remove all waste materials, rubbish, contractor tools, construction equipment, machinery and all surplus materials.

f. Upon written notification from the Bidder that the IDS is completely installed, integrated and operational, and the burn-in testing completed, the GDOE will participate in a final acceptance test of the entire system at a mutually acceptable time.

g. During the final acceptance test, no adjustments, repairs or modifications to the system shall be conducted without the permission of the GDOE.

h. During the course of the final acceptance test by GDOE, the Bidder shall be responsible for demonstrating that, without exception, the completed and integrated IDS complies with the contract requirements. Physical and functional requirements of the project shall be demonstrated and shown. This demonstration will begin by comparing item by item the drawings submitted by the Bidder with its bid offer on the conditions of the IDS requirements. Based on the compliance review, IDS and SCCd equipment will be evaluated.

i. The functionality of the various interfaces between systems will be tested.

j. The installation of all field devices will be inspected. This field inspection will weigh heavily on the general neatness and quality of installation, complete functionality of each device, and compliance with mounting, back box and conduit requirements.

k. All equipment shall be on and fully operational during any and all testing procedures. Provide personnel, equipment, and supplies necessary to perform all site testing. Provide a minimum of two contractor employees familiar with the IDS for the final acceptance test. One contractor employee shall be responsible for monitoring and verifying alarms while the other will be required to demonstrate the function of each device. Supply at least two radios or portable telephones for use during the test.

2. The GDOE retains the right to suspend, terminate or reschedule testing at any time when the IDS is found to be incomplete or fails to perform as specified. In the event that it becomes necessary to suspend, terminate or reschedule the test, all of the GDOE's personnel costs and travel expenses related to the test shall be deducted from the Bidder's retainers fee. In the event it becomes necessary to suspend, terminate or reschedule the test, the Bidder shall work diligently to complete schedule outlining task-by-task completion dates and a tentative date for a subsequent retest. During the final acceptance test, no adjustments, repairs or modifications to the system shall be conducted without the permission of the GDOE.

4.14 Adjustment/Alignment/Synchronization/Cleaning:

A. Subsequent to installation, clean each system component of dust, dirt, grease, or oil incurred during installation or accrued subsequent to installation from other project activities. Prepare for system activation by following manufacturer's recommended procedures for adjustment, alignment, or synchronization. Prepare each component in accordance with appropriate provisions of the component's installation, operations, and maintenance manuals.

4.15 Field Applied Painting:

A. Paint electrical equipment as required to match finish of adjacent surfaces or to meet the indicated or specified safety criteria.

4.16 Nameplate Mounting:

A. Provide number, location, and letter designation of nameplates as indicated. Fasten nameplates to the device with a minimum of two sheet-metal screws or two rivets.

Part 5 ACCESS CONTROL SYSTEM (ACS)

5.1 Standard Products: Material and equipment shall be the standard products of a manufacturer regularly engaged in the manufacture of such products. Items of equipment shall essentially duplicate equipment that have been in satisfactory use at least 2 years prior to bid opening. . Equipment shall be supported by successful bidder for a period of one (1) year from the time of acceptance by GDOE. Maximum response time for service shall be no more than one hour from the time a report is submitted.

5.2 Definitions:

A. Intrusion Alarm: An alarm resulting from the detection of a specified target, attempting to intrude into the protected area or when entry into an entry-controlled area is attempted without successfully using entry control procedures.

B. Nuisance Alarm: An alarm resulting from the detection of an appropriate alarm stimulus, or failure to use established entry control procedures, but which does not represent an attempt to intrude into the protected area.

C. Environmental Alarm: A nuisance alarm resulting from environmental factors.

D. False Alarm: An alarm when there is no alarm stimulus.

E. Duress Alarm: A normally covert alarm condition which results from a set of pre-established conditions such as entering a special code into a keypad or by activating a switch indicating immediate personal danger. This alarm category shall take precedence over other alarm categories.

F. Fail-Safe Alarm: An alarm resulting from detection of diminished functional capabilities.

G. Power Loss Alarm: An alarm resulting from improper use of entry control procedures or equipment.

H. Entry Control Alarm: An alarm resulting from improper use of entry control procedures or equipment.

I. Identifier: a card credential, keypad personal identification number or code, biometric characteristic or any other unique identification entered as data into the entry control database for the purpose of verifying the identity of an individual. Identifiers shall be used by the Access Control System for the purpose of validating passage requests for areas equipped with entry control equipment.

J. Entry Control Devices: any equipment which gives a user the means to input identifier data into the entry control system for verification.

K. Facility Interface Device: a facility interface device shall be any type of mechanism which is controlled in response to passage requests and allows passage through a portal.

L. Portal: specific control point, such as a door or a gate, providing entry or access from one security level to another.

M. Probability of detection: Forty-five successful detections out of 46 tests or 98 successful detections out of 103 tests.

N. Standard Intruder: Person that weighs 100 pounds or less and is 5 ft tall or less, dressed in a long-sleeved shirt, slacks and shoes and walking, running, crawling or jumping through a protected zone in the most advantageous manner for the intruder.

5.3 System Description:

Provide an Access Control System as described and shown on the drawing submitted by Bidder. All computing devices, as defined in 47 CFR 15, shall be certified to comply with the requirements for Class A computing devices and labeled as set forth in 47 CFR 15. Electronic equipment shall comply with 47 CFR 15.

A. Central Station: configure the central station to provide operator interface, interaction, dynamic and real time monitoring, display, and control. The central station shall control system networks to interconnect all system components including peer or subordinate workstations, enrollment stations and field equipment. The system shall be able to manage up to 16,000 uniquely identifiable inputs and outputs.

B. Systems Networks: System networks shall interconnect all components of the system. These networks shall include communications between a central station and any peer or subordinate workstations, enrollment stations, local annunciation stations, portal control stations or redundant central stations. The systems network shall provide totally automatic communication of status changes, commands, field initiated interrupts and any other communications required for proper system operation. System communication shall not require operator initiation or response. System communication shall return to normal after any partial or total network interruption such as power loss or transient upset. The system shall automatically annunciate communication failures to the operator with identification of the communication link that has experienced a partial or total failure. A communications controller may be used a s an interface between the central station display systems and the field device network. The communications controller shall provide those functions needed to attain the specified network communications performance.

1. Field Device Network: The field device network shall provide communication between a central control station and field devices of the system. The field device network shall be configured as submitted in the Bidders drawings. Field devices shall consist of alarm annunciation local processors and entry control local processors. Each field device shall be interrogated during each interrogation cycle. The field device network shall provide line supervision that detects and annunciates communications interruptions or compromised communications between any field device and the central station.

C. Field Equipment: Field equipment shall include local processors, sensors and controls. Local processors shall serve as an interface between the central station and sensors and controls. Data exchange between the central station and the local processors shall include down-line transmission of commands, software and databases to local processors. The up line data exchange from the local processor to the central station shall include status data such as intrusion alarms, status reports and entry control records. Local processors are categorized as alarm annunciation or entry control or a combination thereof.

D. CCTV System Interface: Provide an interface for connection of the central station to the CCTV system. This shall not be accomplished by using an electro-mechanical relay assembly.

E. Error Detection and Retransmission: Use a cyclic code error detection method, between local processors and the central station, which will detect single and double bit errors, burst errors of 8 bits or less, and at least 99 percent of all other multibit and burst error conditions. Interactive or product error detection codes alone will not be acceptable. A message is in error if 1 bit is received incorrectly. The system shall retransmit messages with detected errors. A 2-digit decimal number shall be operator assignable to each communication link representing the number of retransmission attempts. When the number of consecutive retransmission attempts equals the assigned quantity, the central station shall print a communication failure alarm message. The system shall monitor the frequency of data transmission failure for display and logging.

F. Probability of Detection: Each zone shall have a con5tinuous probability of detection greater than 90 percent and shall be demonstrated with a confidence level of 95 percent. The actual number of tests performed, per sensor, to demonstrate system performance shall be nominated by the Bidder in the performance verification test procedures submitted to the GDOE for approval.

G. Standard Intruder: The system shall be able to detect a standard intruder moving through a protected zone.

H. False Alarm Rate:

1. Interior: Provide a false alarm rate of no more than 1 false alarm per sensor per 30 days at the specified probability of detection.

2. Exterior: Provide a false alarm rate of no more than 1 false alarm per sensor per 5 days at the specified probability of detection.

I. Environmental Nuisance Alarm Rate: Environmental alarms during nominal conditions shall not exceed 1 per day per sensor.

J. Error and Throughput Rates: Error and throughput rates shall be single portal performance rates obtained when processing individuals one at a time.

1. Type 1 Error Rate: Type 1 error rate is an error where the system denies entry to an authorized, enrolled identifier or individual. The rate shall be less than 1 percent.

2. Type II Error Rate: Type II error rate is an error where the system grants entry to an unauthorized identifier or individual. The entry control Type II error rate shall be less than 0/1 percent.

K. Passage: Passage is ingress and/or egress past an entry control device, or through a portal. Entry control procedures and equipment shall be implemented for passage through each portal as shown on Bidders drawings.

L. Detection Resolution: The system shall have detection resolution sufficient to locate intrusions at each device and zone; and tampering at individual devices.

M. Electrical Requirements: Electrically powered equipment shall operate on 120 volt 60 Hz AC. Equipment shall be able to tolerate variations in the voltage source of plus or minus 10 percent, and variations in the line frequency of plus or minus 2 percent with no degradation of performance.

1. System Response: The field device network shall provide a system end-to-end response time of 4 seconds or less for every device connected to the system. Alarms shall be annunciated at the central station within 1 second of the alarm occurring at a local processor or device controlled by a local processor, and within 100 milliseconds if the alarm occurs at the central station. Alarm and status changes shall be displayed within 100 milliseconds after receipt of data by the central station. All graphics shall be displayed, including graphics generated map displays, on the console monitor within 5 seconds of alarm receipt at the security console. This response time shall be maintained during system heavy load.

2. System Heavy Load Condition: For the purpose of system heavy load condition, the system shall consist of central station equipment, communication controllers and all local processors. System heavy load condition is the occurrence of alarms at the rate of 10 alarms per second distributed evenly among all local processors in the system. The alarm printer shall continue to print out all occurrences, including time of occurrence, to the nearest second.

N. System Capacity: the system will be comprised of scalable central servers, monitoring stations, and administrative stations. The system shall also monitor and control the inputs and outputs. The system will discriminate to the individual sensors, switches, and terminal devices and report status at the appropriate workstations. Include a minimum expansion capability of 25 percent through additional software capacity, hardware capacity at the local panel level, or hardware capacity at the input module level.

O. Console: Console equipment, unless designated otherwise, shall be rated for continuous operation under ambient environmental conditions of 36 to 122 degrees F and a relative humidity of 20 to 95 percent relative humidity, non-condensing.

5.4 Submittal of Technical Data and Computer Software:

All items of computer software and technical data (including technical data which relates to computer software), which is specifically identified in this specification shall be delivered to the GDOE. All data delivered shall be identified by reference to the particular specification paragraph against which it is furnished.

A. Group I - Technical Data Package: The data package shall include the following as required:

1. System Drawings:

a. Functional system block diagram, identifying communications protocols, wire type and quantity, and approximate distances.

b. Security console installation, including block and wiring diagrams and equipment layout.

c. Local pr4ocessor installation, including typical block and wiring diagrams.

d. Field equipment enclosures with local processor installation and schematics.

e. Device wiring and installation drawings.

f. Details of connections to power sources, including power supplies and grounding.

g. Details of surge protection device installation.

f. Entry control system block diagram and layout.

g. CCTV assessment block diagram and layout.

2. Intrusion detection system block diagram and sensor layout (including exterior and interior zones) as well as sensor detection patterns.

3. Manufacturer's Data: The data package shall include manufacturer's data for all materials and equipment, including terminal devices, local processors and central station equipment provided under this specification.

4. System Description and Analyses: The data package shall include system descriptions, analyses, and calculations used in sizing equipment specified. Descriptions and calculations shall show how the equipment will operate as a system to meet the performance of this specification. The data package shall include the following:

a. On-board Random Access Memory (RAM).
b. Communication speeds and protocol descriptions.
c. Hard disk size and configuration.
d. DVD/DVD-RW drive speed and protocol descriptions.
e. Streaming tape back-up speed and capacity.
f. Alarm response time calculations.
g. Command response time calculations.
h. Start-up operations including system and database backup operations.
i. Expansion capability and method of implementation.
j. Sample copy of each report specified.

a. Color output of typical graphics.
b. System throughput calculation.

The data package shall also include a table comparing the above information for the equipment supplied and the minimum required by the software manufacturer.

5. Software Data: The software data package shall consist of descriptions of the operation and capability of system, and application software as specified.

6. Overall System Reliability Calculations: The overall system reliability calculations data package shall include all manufacturer's reliability data and calculations required to show compliance with the specified reliability in accordance with paragraph, overall system reliability requirements.

7. Certifications: Specified manufacturer's certifications shall be included with the data package certification.

8. Key Control Plan: Provide a key control plan including the following:

a. Procedures that will be used to log and positively control all keys during installation.
b. A listing of all keys and where they are used.
c. A listing of all persons allowed access to the keys.

B. Group II - Technical Data Package: Prepare and submit a report of "Current Site Conditions: to the GDOE documenting site conditions that significantly differ from the design drawings or conditions that affect performance of the system to be installed. Provide specification sheets, or written functional requirements to support the findings, and a cost estimate to correct those site changes or conditions. Do not correct any deficiency without written permission from the GDOE.

C. Group III - Technical Data Package: Prepare test procedures and reports for the pre-delivery test.

D. Group IV - Technical Data Package: Prepare test procedures and reports for the performance verification test and the endurance test. Deliver the performance verification test and endurance test procedures to the GDOE for approval.

1. Operation and Maintenance Manuals: Delivery draft copies in hard and soft format of the operator's, software, hardware, functional design, and maintenance manuals, as specified below, to the GDOE 30 days prior to beginning the performance verification test for use during the test period.

2. Operator's Manuals: The operator's manual shall fully explain all procedures and instructions for the operation of the system, including:

a. Computers and peripherals.
b. User enrollment.
c. System start-up and shutdown procedures.
d. Use of system and application software.
e. Recovery and restart procedures.
f. Graphic alarm presentation.
g. Use of report generator and generation of reports, including sample reports.
h. Data entry.
i. Operator commands.
j. Alarm and system messages and printing formats.
k. System entry requirements.

3. Software Manual: The software manual shall describe the functions of all software and shall include all other information necessary to enable proper loading, testing, and operation. The manual shall include:

a. Definition of terms and functions.
b. Use of system and application software.
c. Procedures for system initialization, start-up and shutdown.
d. Alarm reports.
e. Reports generation.
f. Database format and date entry requirements.
g. Directory of all disk files.
h. Description of all communication protocols, including data formats, command characters, and a sample of each type of data transfer.
i. Interface definition.

4. Hardware Manual: A manual describing all equipment furnished including:

a. General description and specifications.
b. Installation and checkout procedures.
c. Equipment electrical schematics and layout drawings.
d. System schematics and layout drawings.
e. Alignment and calibration procedures.
f. Manufacturer's repair parts list indicating sources of supply.
g. Interface definition.

5. Function design Manual: The functional design manual shall identify the operational requirements for the system and explain the theory of operation, design philosophy, and specific functions. A description of hardware and software functions, interfaces, and requirements shall be included for all system operating modes.

6. Data Entry: Enter all data needed to make the system operational. Deliver the data to the GDOE on data entry forms, utilizing data from the contract documents. Bidder's field surveys, and other pertinent information in the Bidder's possession required for complete installation of the database. Identify and request from the GDOE, any additional data needed to provide a complete and operational Access Control System. The completed forms shall be delivered to the GDOE for review and approval at least 30 days prior to the Bidder's scheduled date. When the Access Control System database is to be populated in whole or in part from an existing or GDOE furnished electronic database, demonstrate the field mapping scheme to correctly input the data.

E. Group V – Technical Data Package: Deliver final copies of the manuals as specified, in PDF format and bound in hardback, loose-leaf binders, to the GDOE within 30 days after completing the endurance test. The draft copy used during site testing shall be updated with any changes required prior to final delivery of the manuals. Each manual's contents shall be identified on the cover. The manual shall include names, addresses, and telephone numbers of each subcontractor installing equipment and systems and nearest service representative for each item of equipment. The manuals shall have a table of contents and tab sheets. Tab sheets shall be placed at the beginning of each chapter or section and at the beginning of each appendix. The final copies delivered after completion of the endurance test shall include modifications made during installation, checkout, and acceptance. The number of copies of each manual to be delivered shall be as specified below:

1. Operator's Manual: A copy of the final and approved Operator's Manual.

2. Software Manual: A copy of the final and approved software Manual.

3. Hardware Manual: A copy of the final and approved Hardware Manaual.

4. Functional Design Manual: A copy of the final and approved Functional Design Manual.

5. Maintenance Manual: A copy of the final and approved Maintenance Manual.

6. Final System Drawings: Maintain a separate set of drawings, elementary diagrams and wiring diagrams of the system to be used for final system drawings. This set shall be accurately kept up-to-date with all changes and additions to the Access Control System and shall be delivered to the GDOE with the final endurance test report. In addition to being complete and accurate, this set of drawings shall be kept neat and shall not be used for installation purposes. Final drawings submitted with the endurance test report shall be finished drawings on optical disk in AutoCAD 2010 format.

5.5 Quality Assurance:

A. Pre-Delivery Testing: Perform pre-delivery testing, site performance verification testing, and adjustment of the complete Access Control System. Provide qualified personnel, equipment, instrumentation, and supplies necessary to perform testing. Written notification of planned testing shall be given to the GDOE at least 14 days prior to the test; notice shall not be given until after the Bidder has received written approval of the specific test procedures.

1. Assemble the test system as specified, and perform tests to demonstrate that performance of the system complies with specified requirements in accordance with the approved pre-delivery test procedures. The tests shall take place during regular daytime working hours on weekdays. Model numbers of equipment tested shall be identical to those to be delivered to the site. Original copies of all data produced during pre-delivery testing, including results of each test procedure, shall be delivered to the GDOE at the conclusion of pre-delivery testing, prior to GDOE approval of the test. The test report shall be arranged so that all commands, stimuli, and responses are correlated to allow logical interpretation.

2. Test Setup: The pre-delivery test setup shall include the following:

- All central station equipment.

- At least 1 of each type Data Transmission System (DTS) link, but not less than 2 links, and associated equipment to provide a fully integrated system.

- The number of local processors shall equal the amount required by the site design.

- At least 1 of each type sensor used.

- Enough sensor simulators to provide alarm signal inputs to the system equal to the number of sensors required by the design. The alarm signals shall be manually or software generated.

- At least 1 of each type of terminal device used.

- At least 1 of each type of portal configuration with all facility interface devices as specified or shown.

- Prepare test procedures and reports for the pre-delivery test, and delivery the pre-delivery test procedures to the GDOE for approval. Delivery the final pre-delivery test report after completion of the pre-delivery test.

B. Test Procedures and Reports: Test procedures shall explain in detail, step-by-step actions and expected results, demonstrating compliance with the requirements specified. Test reports shall be used to document results of the tests. Reports shall be delivered to the GDOE within 7 days after completion of each test.

C. Line Supervision:

1. Signal and Data Transmission System (DTS) Line Supervision: all signal and DTS lines shall be supervised by the system. The system shall supervise the signal lines by monitoring the circuit for changes or disturbances in the signal and for conditions as described in UL 1076 for line security equipment. The system shall initiate an alarm in response to a current change of 10 percent or greater. The system shall also initiate an alarm in response to opening, closing, shorting, or grounding of the signal and DTS lines.

5.6 Environmental Requirements:

A. Interior, Controlled Environment: System components, except the console equipment installed in interior locations, having controlled environments shall be rated for continuous operation under ambient environmental conditions of 36 to 122 degrees F dry bulb and 20 to 95 percent relative humidity, non-condensing.

B. Interior, Uncontrolled Environment: System components installed in interior locations having uncontrolled environments shall be rated for continuous operation under ambient environmental conditions of 0 to 122 degrees F dry bulb and 10 to 95 percent relative humidity, non-condensing.

C. Exterior Environment: System components that are installed in locations exposed to weather shall be rated for continuous operation under ambient environmental conditions of -30 to plus 122 degrees F dry bulb and 10 to 95 percent relative humidity, condensing. In addition, the system components shall be rated for continuous operation when exposed to performance conditions as specified in UL 294 and UL 639 for outdoor use equipment. Components shall be rated for continuous operation when exposed to rain as specified in NEMA 250, winds up to 170 mph.

5.7 Maintenance and Service:

A. Warranty Period: Provide all labor, equipment, and materials required to maintain the entire system in an operational state as specified, for a period of one year after formal written acceptance of the system to include scheduled and non-scheduled adjustments.

B. Description: of Work: The adjustment and repair of the system includes all computer equipment, software updates, communications transmission equipment and DTS, local processors, sensors and entry control, facility interface, and support equipment. Responsibility shall be limited to Bidder installed equipment. Repair, calibration, and other work shall be provided and performed in accordance with the manufacturer's documentation and instruction. The maintenance manual shall include descriptions of maintenance for all equipment including inspection, periodic prevention maintenance, fault diagnosis, and repair or replacement of defective components.

C. Personnel: Service personnel shall be certified in the maintenance and repair of the specific type of equipment installed and qualified to accomplish work promptly and satisfactorily. The GDOE shall be advised in writing of the name of the designated service representative, and of any change in personnel.

D. Schedule of Work: Perform two minor inspection at 6 month intervals (or more often if required by the manufacturer), and two major inspections offset equally between the minor inspections to effect quarterly inspection of alternating magnitude. Bidder to provide the GDOE an inspection report for both minor and major inspections within 6 days after the work is accomplished. These reports shall document the conditions of the system and recommend any corrective action necessary.

1. Minor Inspections: Minor inspections shall include visual checks and operational tests of console equipment, peripheral equipment, local processors, sensors, and electrical and mechanical controls. Minor inspections shall also include mechanical adjustment of laser printers.

2. Major Inspections: Major inspections shall include work described under paragraph Minor Inspections and the following work:

    a. Clean interior and exterior surfaces of all system equipment and local processors, including workstation monitors, keyboards, and console equipment.
    b. Perform diagnostics on all equipment.
    c. Check, walk test, and calibrate each sensor.
    d. Run all system software diagnostics and correct all diagnosed problems.
    e. Resolve any previous outstanding problems.
    f. Purge and compress data bases.
    g. Review network configuration.

3. Scheduled Work: Scheduled work shall be performed during regular working hours, Monday through Friday, excluding federal holidays.

E. Emergency Service: The GDOE will initiate service calls when the system is not functioning properly. Qualified personnel shall be available to provide service to the complete system. The GDOE shall be furnished with a telephone number where the service supervisor can be reached at all times. Service personnel shall be at site within 1 hour after receiving a request for service. The system shall be restored to proper operating condition within 8 hours after service personnel arrive onsite and obtain access to the system.

F. Operation: Performance verification test procedures shall be used after all scheduled maintenance and repair activities to verify proper component and system operation.

G. Records and Logs: Keep records and logs of each task (electronic and hard copy), and organize cumulative records for each component, and for the complete system chronologically resulting in a continuous log to be maintained for all devices. The log shall contain all initial settings. Complete logs shall be kept and shall be available for inspection onsite, demonstrating that planned and systematic adjustments and repairs have been accomplished for the system.

H. Work Requests: Separately record each service call request, as received. The form shall include the serial number identifying the component involved, its location, date and time the call was received, specific nature of trouble, names of service personnel assigned to the task, instructions describing what has to be done, the amount and nature of the material to be used, the time and date work started, and the time and date of completion. Deliver a record of the work performed within 5 days after work is accomplished.

I. System Modifications: Make any recommendations for system modification in writing to the GDOE. System modifications shall not be made without prior written approval of the GDOE. Any modifications made to the system shall result in the updating of the operation and maintenance manuals as well as any other documentation affected.

J. Software: Provide a description of all software updates to the GDOE, who will then decide whether or not they are appropriate for implementation. After written notification by the GDOE, implement the designated software updates and verify operation in the system. These updates shall be accomplished in a timely manner, fully coordinated with system operators, and shall be incorporated into the operation and maintenance manuals, and software documentation. Make a system image file so the system can be restored to its original state if the software update adversely affects system performance.

Part 1 – Products:

1.1 Materials Requirements:

A. Materials and Equipment: Units of equipment that perform identical, specified functions shall be products of a single manufacturer. All material and equipment shall be new and currently in production. Each major component of equipment shall have the manufacturer's model and serial number in a conspicuous place. Systems equipment shall conform to UL 294 and UL 1076.

B. Nameplates: Laminated plastic nameplates shall be provided for local processors. Each nameplate shall identify the local processor and its location within the system. Laminated plastic shall be 1/8 inch thick, white with black center core. Nameplates shall be a minimum of 1 x 3 inches, with minimum ¼ inch high engraved block lettering. Nameplates shall be attached to the inside of the enclosure housing the local processor. Other major components of the system shall have the manufacturer's name, address, type or style, model or serial number, and catalog number on a corrosion resistant plate secured to the item of equipment. Nameplates will not be required for devices smaller than 1 x 3 inches.

C. Power Line Surge Protection: Equipment connected to alternating current circuits shall be protected from power line surges. Equipment protection shall withstand surge

D. Sensor Device Wiring and Communication Circuit Surge Protection Inputs shall be protected against surges induced on device wiring. Outputs shall be protected against surges induced on control and device wiring installed outdoors and as shown. Communications equipment shall be protected against surges induced on any communications circuit. Cables and conductors, except fiber optics, which serve as communications circuits from console to field equipment, and between field equipment, and additional triple electrode gas surge protectors rated for the application on each wire line circuit shall be installed within 3 feet of the building cable entrance. Fuses shall not be used for surge protection. The inputs and outputs shall be tested in both normal mode and common mode using the following two waveforms:

1. A 10 microsecond rise time by 1000 microsecond pulse width waveform with a peak voltage of 1500 Volts and peak current of 60 amperes.

2. An 8 microsecond rise time by 20 microsecond pulse width waveform with a peak voltage of 1000 Volts and peak current of 500 amperes.

E. Power Line Conditioners: A power line conditioner shall be furnished for the console equipment and each local processor. The power line conditioners shall be of the ferro-resonant design, with no moving parts and no tap switching, while electrically isolating the secondary from the power line side. The power line conditioners shall be sized for 125 percent of the actual connected kVA load. Characteristics of the power line conditioners shall be as follows:

F. Field Enclosures:

1. Interior Sensor: Sensors to be used in an interior environment shall have a housing that provides protection against dust, falling dirt, and dripping noncorrosive liquids.

2. Exterior Sensor: Sensors to be used in an exterior environment shall have a housing that provides protection against windblown dust, rain and splashing water, and hose directed water.

3. Interior Electronics: System electronics to be used in an interior environment shall be housed in enclosures which meet the requirements of NEMA 250 Type 12.

4. Exterior Electronics: System electronics to be used in an exterior environment shall be housed in enclosures which meet the requirements of NEMA 250 Type 4X.

5. Corrosion Resistant: System electronics to be used in a corrosive environment as defined in NEMA 250 shall be housed in metallic non-corrosive enclosures which meet the requirements of NEMA 250 Type 4X.

G. Fungus Treatment: System components located in fungus growth inductive environments shall be completely treated for fungus resistance. Treating materials containing a mercury bearing fungicide shall not be used. Treating materials shall not increase the flammability of the material or surface being treated. Treating materials shall cause no skin irritation or other injury to personnel handling it during fabrication,, transportation, operation, or maintenance of the equipment, or during use of the finished items when used for the purpose intended.

H. Tamper Provisions: Tamper Switches: Enclosures, cabinets, housings, boxes, and fittings having hinged doors or removable covers and which contain circuits or connections of the system and its power supplies, shall be provided with cover operated, corrosion-resistant tamper switches, arranged to initiate an alarm signal when the door or cover is moved. The enclosure and the tamper switch shall function together and shall not allow direct line of sight to any internal components before the switch activates. Tamper switches shall be inaccessible until the switch is activated; have mounting hardware concealed so that the location of the switch cannot be observed from the exterior of the enclosure; be connected to circuits which are under electrical supervision at all times, irrespective of the protection mode in which the circuit is operating; shall be spring-loaded and held in the closed position by the door or cover; and shall be wired so that the circuit is broken when the door or cover is disturbed.

a. Non-sensory Enclosures: Tamper switches must be installed on all non-sensory enclosures.
b. Sensory Enclosures: Tamper switches must be installed on all sensory enclosures or housings.

1. Enclosure Covers: Covers of pull and junction boxes provided to facilitate initial installation of the system need not be provided with tamper switches if they contain no splices or connections, but shall be protected by tack welding or brazing the covers in place or by tamper resistant security fasteners. Labels shall be affixed to such boxes indicating they contain no connections.

I. Locks and Key-Lock Switches:

1. Locks: Locks shall be provided on system enclosures for maintenance purposes. Locks shall be UL listed, round-key type with 3 dual, 1 mushroom, 3 plain pin tumblers or conventional key type lock having a combination of 5 cylinder pin and 5-point 3 position side bar. Keys shall be stamped "DO NOT DUPLICATE." The locks shall be arranged so that the key can only be withdrawn when in the locked position.

   Maintenance locks shall be keyed alike and only 2 keys shall be furnished for all of these locks. These keys shall be controlled in accordance with the key control plan as specified in paragraph Key Control Plan.

2. Construction Locks: A set of temporary locks shall be used during installation and construction. The final set of locks installed and delivered to the GDOE shall not include any of the temporary locks.

J. System Components: System components shall be designed for continuous operation. Electronic components shall be solid state type, mounted on printed circuit boards conforming to UL 796. Printed circuit board connectors shall be plug-in, quick-disconnect type. Power dissipating components shall incorporate safety margins of not less that 25 percent with respect to dissipation ratings, maximum voltages, and current carrying capacity. Control relays and similar switching devices shall be solid state type or sealed electro-mechanical.

1. Modularity: Equipment shall be designed for increase of system capability by installation of modular components. System components shall be designed to facilitate maintenance through replacement of modular subassemblies and pars.

2. Maintainability: Components shall be designed to be maintained using commercially available tools and equipment. Components shall be arranged and assembled so they are accessible to maintenance personnel. There shall be no degradation in tamper protection, structural integrity, EMI/RFI attenuation, or line supervision after maintenance when it is performed in accordance with manufacturer's instructions.

3. Interchangeability: The system shall be constructed with off-the-shelf components which are physically, electrically and functionally interchangeable with equivalent components as complete items. Replacement of equivalent components shall not require modification of either the new component or of other components with which the replacement items are used. Custom designed or one-of-a-kind items shall not be used. Interchangeable components or modules shall not require trial and error matching in order to meet integrated system requirements, system accuracy, or restore complete system functionality.

4. Product Safety: System components shall conform to applicable rules and requirements of NFPA 70 and UL 294. System components shall be equipped with instruction plates including warnings and cautions describing physical safety, and special or important procedures to be followed in operating and servicing system equipment.

K. Controls and Designations: Controls and designations shall be as specified in NEMA ICS 1.

L. Alarm Output: The alarm output of each sensor shall be a single pole double throw (SPDT) contact rated for a minimum of 0.25 a AT 24 Volts dc.

5.8 Central Station Hardware: The central station computer(s) shall be standard, off the shelf, unmodified digital computer of modular design. The requirements indicated below are minimum requirements.

A. Processor Speed: The processor shall utilize a minimum architecture of a 32-bit CSIC. The operating speed of the processor shall be a minimum of: Workstation 2.4 GHZ; Server 2.4 GHZ.

B. Memory: The minimum installed and expandable RAM memory sizes are as follows: Workstation Installed 16 MB; Expandable 32 GB; Server 16 GB; Expandable 32 GB.

C. Power Supply: The power supply, have a minimum capacity of: Workstation 300 Watts; Server 500 Watts.

D. Real Time clock (RTC): An RTC shall be provided. Accuracy shall be within plus or minus 1 minute per month. The clock may be made accurate by automatic time-syncing software using standard protocols. The RTC shall maintain time in a 24-hour format including seconds, minutes, hours, date, and month and shall be resettable by software. The clock shall continue to function for a period of 1 year without power.

E. Serial Ports: The following ports shall be provided on each workstation type, as a minimum:

1. Two TIA-232 serial.

2. Serial ports shall have adjustable data transmission rates from 9600 to 115.2 Kbps and shall be selectable under program control.

3. One enhanced parallel port.

4. One RJ-45 Network Interface Connector.

5. Two PS/2 or 6-pin mini-DIN ports for keyboard and mouse.

6. Two USB ports.

F. Network Interface Card: A Network Interface Card (NIC) shall be provided for each computer type with a minimum speed of: Workstation 100 MBPS; Server 100 MBPS.

G. Color Monitor: The monitor shall be no less than 17 inches with a minimum resolution of 1280 by 1024 pixels, non-interlaced, and a maximum dot pitch of 0.28 millimeters. The video card shall support at least 256 colors at a resolution of 1280 by 768. The workstations shall operate with the following minimum size and types of video RAM: Workstation 64 MB shared memory; Server Integrated controller with 8 MB of SDRAM.

H. Keyboard: A101: A keyboard having a minimum 64 character, standard ASCII character, based on ANSI INCITS 154 shall be furnished.

I. Enhancement Hardware: Enhancement hardware, such as special function keyboards, special function keys, touch screen devices, or mouse shall be provided for frequently used operator commands, or as shown, such as: Help, Alarm Acknowledge, Place Zone In Access, Place Zone In Secure, System Test, Print Reports, Change Operator, and Display Graphics.

J. Disk Storage: A hard disk with controller having a maximum average access time of 10 milliseconds shall be provided. The hard disk shall provide a minimum formatted storage: Workstation 200 GB SCI/EIDE @7200 RPM; Server 500 GB SCI/EIDE @7200 RPM.

K. Magnetic Tape System: A 4 mm cartridge magnetic tape system shall be provided. Each tape shall be computer grade, in a rigid cartridge with spring-loaded cover and write-protect. The tape drives shall utilize uncompressed and compressed capacity tapes as follows: Workstation N/A; Server 20/40 GB, DDS4.

L. Modem: A modem shall be provided and operate at 57,600 bps, full duplex on circuits using asynchronous communications. Modem shall have error detection, auto answer/autodial, and call-in-progress detection. The modem shall meet the requirements of ITU V.34, ITU V.92 for error correction and ITU V.42 for data compression standards, and shall be suitable for operating on unconditioned voice grade telephone lines in conformance with 47 CFR 68.

M. Audible Alarm: The manufacturer's standard audible alarm shall be provided. Each of the computer station types shall include a soundboard and speakers to provide audio indications for the operator.

N. Mouse: A mouse with a minimum resolution of 400 dots per inch shall be provided.

O. DVD/DVD-RW nominal storage capacity of 4.7 Gigabytes shall be provided. These drives shall have the following minimum characteristics:

1. Data Transfer Rate: 3.6 Mbps.
2. Average Access Time: 150 milliseconds.
3. Cache memory: 256 Kbytes.
4. Data throughput: 3.6 Mbyte/second, minimum.
5. Read speed: 12x.
6. Write speed: 4x.

P. Alarm and Report Printer: A printer shall be provided and interconnected to the central station equipment. The printer shall be a laser printer with printer resolution of at least 600 dots per inch. The printer shall have at least 8 megabytes of RAM. Printing speed shall be at least 15 pages per minute with a 100-sheet paper cassette and with automatic feed.

Q. Controllers: Controllers required for operation of specified peripherals, serial, and parallel ports shall be provided.

R. Central Station Equipment Enclosures: Provide color coordinated consoles and equipment cabinets. Equipment cabinets shall have front and back plexiglass doors, thermostatic controlled bottom-mounted fan, and metal fitted and louvered tops. One locking cabinet approximately 6 feet high, 3 feet wide, 18 to 36 inches deep with 3 adjustable shelves, and 4 storage racks for storage of disks, tapes, printouts, printer paper, ribbons, manuals, and other documentation shall be provided.

S. Uninterruptible Power Supply (UPS) A self-contained UPS, suitable for installation and operation at the central station, shall be provided. The UPS shall be sized to provide a minimum of six (6) hours of operation of the central station equipment. If the facility is without an emergency backup generator, the UPS shall provide necessary battery backup power for 24 hours. Equipment connected to the UPS shall not be affected by a power outage of a duration less than the rated capacity of the UPS. UPS shall be complete with necessary power supplies, transformers, batteries, and accessories and shall include visual indication of normal power operation, UPS operation, abnormal operation and visual and audible indication of low battery power. The UPS condition shall be monitored by the Access Control System and displayed at the Central Station through the use of outputs or data stream from the UPS.

T. Enrollment Center Equipment: Enrollment stations shall be provided and located as shown to enroll personnel into, and disenroll personnel from the system database. The enrollment equipment shall only be accessible to authorized entry control enrollment personnel. The enrollment equipment shall include subsystem configuration controls and electronic diagnostic aids for subsystem setup and troubleshooting with the central station.

5.9 Central Station Software: Software shall support all specified functions. The central station shall be online at all times and shall perform required functions as specified. Software shall be resident at the central station, server, and/or the local processor as required to perform specified functions.

A. System Software: System software shall perform the following functions:

1. Support multi-user operation with multiple tasks for each user.
2. Support operation and management of peripheral devices.

3. Provide file management functions for disk I/O, including creation and deletion of files, copying files, a directory of all files including size and location of each sequential and random ordered record.

4. Provide printer spooling.

5. The system shall be designed to support any industry standard net protocol and topology listed below:

   - TCP/IP
   - Novel Netware (IPX/SPX)
   - Digital PATHWORKS
   - Banyan VINES
   - IBM LAN Server (NetBEUI)
   - IBM SNA Networks
   - Microsoft LAN Manager (NetBEUI)
   - NFS Networks
   - Remote Access Service (RAS) via ISDN, x .25, and standard phone lines

6. The system shall be Open Database Connectivity (ODBC) compliant.

7. The system shall support a relational database management system with the proper 32-bit ODBC drivers. Examples of these databases include, but are not limited to, Microsoft SQL 2000, Oracle Server 8i/9i, or IBM B2 Universal Server 7.2.

8. The system shall be portable across multiple platforms to take full advantage of multiple hardware architectures, without changing system software.

9. The system shall support any standard video input source that utilizes a Red/Green/Blue (RGB), Composite, or S-Video signal. Monitor resolution shall support a minimum of 1024 x 768 pixels with SVGA graphics standards.

10. The system shall be designed to support an advanced distributed network architecture, where intelligent system controllers (ISCs) do not need to be home-run wired back to the database server. ISCs shall be wired to any authorized PC that is licensed to run the system software. Network based ISCs shall be able to communicate back with the database server through standard network switches and routers and shall not have to be on the same subnet.

    The system shall also support dual path upstream communications between the ISC and client workstations/database server. ISCs shall be connected to the Local Area Network (LAN) Wide Area Network (WAN) via industry standard TCP/IP or Dial-up communications protocol. As such, any alarm in the system shall be capable of being routed to any client workstation(s) on the network, regardless of the ISC that generated the alarm.

B. Software Scalability: The system software shall be scalable. The software shall have the capability of managing the total operations of the Access Control System capacity of credential readers, alarm inputs, control outputs, and peripheral equipment as shown, as governed by licensing agreements. Minimum requirements for regional server additions shall be driven by bandwidth and latency calculations provided by the manufacturer of the Access Control System.

C. System Architecture: Criticality, operations requirements, and/or limiting points of failure may dictate the development of an enterprise and regional server architecture as opposed to system capacity. Provide server and workstation configurations with all necessary connectors, interfaces, and accessories as shown.

D. Real Time Clock Synchronization: The system shall synchronize each real time clock within 1 second and at least once per day automatically, without operator intervention and without requiring system shutdown.

E. Database Definition Process: Software shall be provided to define and modify each point in the database using operator commands. The definition shall include all parameters and constraints associated with each sensor, commandable output, zone, facility interface device, terminal device, etc. Data entry software shall provide mass enrollment capability, such that multiple devices may be assigned similar parameters with a single entry. Each database item shall be callable for display or printing, including EPROM, ROM and RAM resident data. The database shall be defined and entered into the Access Control System based upon input from the GDOE.

F. Software Tamper: The Access Control System shall annunciate a tamper alarm when unauthorized changes to the system database files are attempted. Three consecutive unsuccessful attempts to log onto the system shall generate a software tamper alarm. A software tamper alarm shall also be generated when an operator or other individual makes 3 consecutive unsuccessful attempts to invoke central processor functions beyond their authorization level. The Access Control System shall maintain a transcript file of the last 5000 commands entered at each central station to serve as an audit trail. The system shall not allow write access to the system transcript files by any person, regardless of their authorization level. The system shall only allow acknowledgement of software tamper alarms and read access to the system transcript files by operators and managers with the highest password authorization level available in the system.

G. Conditional Command Event: The Access Control System software shall provide a programmable timeframe and alarm output for failure of the operator to acknowledge an alarm condition. If an alarm is not acknowledged within the specified timeframe, the alarm and notice of lack of response shall be communicated to other stations on the system. If no other stations are manned 24 hours per day, then an automatic alert must be provided for security response personnel.

H. Peer Computer Control Software: The peer computer control software shall detect a failure of a central computer, and shall cause the other central computer to assume control of all system functions without interruption of operation. Derivers shall be provided in both central computers to support this mode of operation.

I. Application Software: The application software shall provide the interface between the alarm annunciation and entry control local processors, monitor all sensors and DTS links; operate displays; report alarms; generate reports; and assist in training system operators.

Application software shall perform the following functions:

- Support operation and management of peripheral devices.
- Provide printer spooling.
- The system shall be Open Database Connectivity (ODBC) compliant.

1. Operator's Commands: The operator's commands shall provide the means for entry of monitoring and control commands, and for retrieval of system information. Processing of operator commands shall commence within one (1) second of entry, with some form of acknowledgment provided at that time. The operator's commands shall perform tasks including:

a. Request help with the system operation.
b. Acknowledge alarms.
c. Clear alarms.

d. Place zone in access.
e. Place zone in secure.
f. Test the system.
g. Generate and format reports.
h. Print reports.
i. Change operator.

j. Request any graphic displays implemented in the system. Graphic displays shall be completed within 3 seconds from time of operator command.

k. Entry control functions.

2. Command Input: Operator's commands shall be full English language words, acronyms, or graphic symbols selected to allow operators to use the system without extensive training or data processing backgrounds. The system shall prompt the operator in English word, phrase, or acronym, or graphic symbols. Commands shall be available in an abbreviated mode, in addition to the full English language (words and acronyms) commands, allowing an experienced operator to disregard portions, or all, of the prompt-response requirements.

3. Command Input Errors: The system shall supervise operator inputs to ensure they are correct for proper execution. Operator input assistance shall be provided whenever a command cannot be executed because of operator input errors. The system shall explain to the operator, in English words and phrases, why the command cannot be executed. Error responses requiring an operator to look up a code in a manual or other document will not be accepted. Conditions for which operator error assist messages shall be generated shall be generated include:

a. The command used is incorrect or incomplete.
b. The operator is restricted form using that command.
c. The command addresses a point which is disabled or out of service.
d. The command addresses a point which does not exist.
e. The command would violate constraints.
f. Additionally, the system shall write all input keystrokes to a file on the hard drive for subsequent audit purposes.

4. Enhancements: The system shall implement the following enhancements by use of special function keys, touch screen, or mouse, in addition to all other command inputs specified:

a. Help: Used to produce a display for all commands available to the operator. The help command, followed by a specific command, shall produce a short explanation of the purpose, use, and system reaction to that command.

b. Acknowledge Alarms: Used to acknowledge that the alarm message has been observed by the operator.

c. Clear alarms: Used to remove an alarm from the active screen.

d. Input Guard Response: The system shall provide preprogrammed guard responses to allow the monitoring force to create a log of responses to alarm events. The preprogrammed guard inputs shall include phrases such as "dispatched security personnel", "contacted supervisor", or "false alarm".

e. Place Zone in Access: Used to remotely disable intrusion alarm circuits emanating from a specific zone. The system shall be structured so that tamper circuits cannot be disabled by the console operator.

f. Place Zone in Secure: Used to remotely activate intrusion alarm circuits emanating from a specific zone.

g. System Test: Allows the operator to initiate a system wide operational test.
h. Zone Test: Allows the operator to initiate an operational test for a specific zone.
i. Print Reports: Allows the operator to initiate printing of reports.
j. Change Operator: Used for changing operators.
k. Display Graphics: Used to display any graphic displays implemented in the system.

5. System Access Control: The system shall provide a means to define system operator capability and functions through multiple, password protected operator levels. At least 3 operator levels shall be provided. System operators and managers with appropriate password clearances shall be able to change operator levels for all operators. Three successive attempts by an operator to execute functions beyond their defined level during a 24-hour period shall initiate a software tamper alarm. A minimum of 32 passwords shall be usable with the system software. The system shall display the operator's name or initials in the console's first field. The system shall print the operator's name or initials, action, date, and time on the system printer at log-on and log-off. The password shall not be displayed or printed. Each password shall be definable an assignable for the following:

a. Commands usable.
b. Menus available for display.
c. Access to system software.
d. Access to application software.
e. Individual zones which are to be accessed.
f. Access to database.

6. Alarm Monitoring Software: This program shall monitor all sensors, local processors, and DTS circuits and notify the operator of an alarm condition. Alarms shall be printed in red on the alarm printer and displayed first; and within alarm priorities, the oldest unacknowledged alarm shall be displayed first. An alarm is latched into the system upon activation/annunciation.

Once in alarm, no subsequent alarms from that specific device/sensor need be annunciated until the current alarm is investigated and cleared. The system may provide a counter to indicate the number of subsequent alarms from that specific device/sensor that occurred after the initial alarm, but no additional alarms are to be annunciated until the current alarm is "cleared".

Operator acknowledgment of one alarm silences the audible alarm and changes associated map and text icons from flashing red to steady state red. These icons remain red to indicate that the alarm is still open and the system is awaiting identification of the course and resolution by the operator. The operator can resolve the alarm by either the use of CCTV assessment to identify the cause or by dispatching guards/response force to investigate. After the operator has satisfactorily determined the cause of the alarm and is prepared to enter pertinent information into the log, the operator will "clear" the alarm. Clearing the alarm indicates to the system that the operator needs to be notified of any new alarms from that device/sensor. Programmable alarm date to be displayed shall include type of alarm, location of alarm, and secondary alarm messages. Alarm data to be printed shall include: type of alarm, location of alarm, date and time (to nearest second) of occurrence, operator acknowledgement instructions, and operator response. A unique message field with a width of 60 characters shall be provided for each alarm. Assignment of messages to a zone or sensor shall be an operator editable function. Secondary messages shall be assignable by the operator for printing to provide further information and shall be editable by the operator. The system shall provide for 25 secondary messages with a field of 4 lines of 60 characters each. The most recent 1000 alarms shall be stored and shall be recallable by the operator using the report generator.

1. Monitor Display Software: Monitor display software shall provide for text and graphics map displays that include zone status integrated into the display. Different colors shall be used for the various components and real time data. Colors shall be uniform on all displays. The following color coding shall be followed:

a. Flashing Red to alert an operator that a zone has gone into an alarm or that primary power has failed.
b. Red to alert an operator that a zone is in alarm and that the alarm has been acknowledged.
c. Yellow to advise an operator that a zone is in access.
d. Green to indicate that a zone is secure or that power is on.

2. Map Displays/Graphics Linked to Alarms:

a. The System shall relate map displays or other graphics to alarms. Whenever one of the predefined alarm is annunciated on a system control terminal, the map display or graphic related to the alarm shall be automatically displayed. The definition of which maps or graphics shall be displayed with each alarm shall be selectable by system operators through simple menu choices as part of the system initial configuration.

b. System graphics shall be provided to allow multiple levels of information for the system operator. The initial level shall provide an overall site map distinguishing sensored facilities and assets. Active links or icons shall be used to trigger the display of subsequent maps, providing greater detail and definition of the area symbolized. These active links or icons shall be color dynamic, reflecting in rea-time the highest priority off-normal conditions of the device or map it represents. Multiple layers may be used to arrive at the specific device locations.

c. The system may utilize two (2) monitors for text and map displays respectively for enhancing operator performance.

3. User Defined Prompts/Messages Linked to Alarms: The System shall provide a means to relate operator defined prompts and other messages to predefined alarms. Whenever one of the predefined alarms is annunciated on a system control terminal, the prompts or messages related to the alarm shall be automatically displayed.

4. System Test Software: This software shall enable the operator to initiate a test of the system. This test can be of the entire system or of a particular portion of the system at the operator's option. The results of each test shall be sorted for future display or print out in report form.

5. Report Generator: software shall be provided with commands to generate reports for displaying, printing, and storing on disk and tape. Reports shall be stored by type, date, ad time and shall be printed on the report printer. Reports shall be spooled, allowing the printing of one report to e complete before the printing of another report commences. The dynamic operator for the system shall not be interrupted to generate a report. The report generation mode, either periodic, automatic or on request shall be operator selectable. The report shall contain the time and date when the report was printed, and the name of operator generating the report. The exact format of each report type shall be operator configurable.

a. Periodic automatic Report Modes: The system shall allow for specifying, modifying, or inhibiting the report to be generated, the time the initial report is to be generated, the time interval between reports, end of period, and the output peripheral.

b. Request Report Mode: The system shall allow the operator to request at any time an immediate printout of any report.

c. Alarm report: The alarm report shall include all alarms recorded by the system over an operator selectable time. The report shall include such information as: type of alarm (intrusion, tamper, etc.); type of sensor; location including zone; date; time; and action taken.

d. System test Report: This report documents the operational status of all system components following a system test.

e. Access/Secure Report: This report documents all zones placed in access, the time placed in access, and the time placed in secure mode.

f. Entry Control Reports: The system shall generate hard copy reports of identifier, terminal, and guard tour tracking reports, and versions with defined parameters of the manufacturer's standard management and activity reports.

6. Entry Control Enrollment Software: The enrollment station shall provide database management functions for the system, and shall allow an operator to change and modify the data entered in the system as needed. The enrollment station shall not have any alarm response or acknowledgment functions as a programmable function of the system. Multiple, password protected access levels shall be provide at the enrollment station. Database management and modification functions shall require a higher operator access level than personnel enrollment functions. The program shall provide a means for disabling the enrollment station when it is unattended to prevent unauthorized use. The program shall provide a method to enter personnel identifying information into the entry control database files through enrollment stations to include a credential unit in use at the installation. The program shall allow entry of data into the system database files through the use of simple menu selections and data fields. The data field names shall be customized to suit user and site needs. All personnel identity verification subsystems selected for use with the system shall fully support the enrollment function and shall be compatible with the entry control database files.

5.10 Field Processing Hardware:

A. Alarm annunciation Local Processor: The alarm annunciation local processor shall respond to interrogations from the field device network, recognize and store alarm status inputs until they are transmitted to the central station and change outputs based on command received from the central station. The local processor shall also automatically restore communication within ten (10) seconds after an interruption with the field device network and provide dc line supervision on each of its alarm inputs.

- Inputs. Local processor inputs shall monitor dry contacts for changes of state that reflect alarm conditions. The local processor shall have at least eight (8) alarm inputs which allow wiring as normally open or normally closed contact for alarm condition. It shall also provide line supervision for each input by monitoring each input for abnormal open, grounded, or shorted conditions using dc current change measurements.

  The local processor shall report line supervision alarms to the central station. Alarms shall be reported for any condition that remains off normal at an input for longer than 500 milliseconds. Each alarm condition shall be transmitted to the central computer during the next interrogation cycle.

- Outputs. Local processor outputs shall reflect the state of commands issued by the central station. The outputs shall be a form C contact and shall include normally open and normally closed contacts. The local processor shall have at least four (4) command outputs.

- Communications. The local processor shall be able to communicate with the Central Station via RS485 or TCP/IP as a minimum.

1. Processor Power Supply: Local processor and sensors shall be powered from an uninterruptible power source. The uninterruptible power source shall provide eight (8) hours of battery back-up power in the event of primary power failure and shall automatically fully recharge the batteries within twelve (12) hours after primary power is restored. If the facility is without an emergency generator, the uninterruptible power source shall provide 24 hours of battery backup power.

There will be no equipment malfunctions or perturbations or loss of data during the switch from primary to battery power and vice versa. Batteries shall be sealed, non-outgassing type. The power supply shall be equipped with an indicator for ac input power and an indication for dc output power. Loss of primary power shall be reported to the central station as an alarm.

2. Auxiliary Equipment Power: A GFI service outlet shall be furnished inside the local processor's enclosure.

A. Entry Control Local Processor: The entry control local processor shall respond to interrogations from the field device network, recognize and store alarm status inputs until they are transmitted to the central station and change outputs based on commands received from the central station. The local processor shall also automatically restore communication within 10 seconds after an interruption with the field device network and provide dc line supervision on each of its alarm inputs. The entry control local processor shall provide local entry control functions including communicating with field devices such as card readers, keypads, biometric personal identity verification devices, door strikes, magnetic latches, gate and door operators and exit push buttons. The processor shall also accept data from entry control field devices as well as database downloads and updates from the central station that include enrollment and privilege information. The processor shall also send indications of success or failure of attempts to use entry control field devices and make comparisons of presented information with stored identification information. "the processor shall grant or deny entry by sending control signals to portal control devices and mask intrusion alarm annunciation for sensors stimulated by authorized entries. The entry control local processor shall use inputs from entry control devices to change modes between access and secure. The local processor shall maintain a date-time and location stamped record of each transaction and transmit transaction records to the central station. The processor shall operate as a stand-alone portal controller using the downloaded data base during periods of communication loss between the local processor and the central station. The processor shall store a minimum 4000 transactions during periods of communication loss between the local processor and the central station for subsequent upload to the central station upon restoration of communication.

- Inputs. Local processor inputs shall monitor dry contacts for changes of state that reflect alarm conditions. The local processor shall have at least eight (8) alarm inputs which allow wiring as normally open or normally closed contact for alarm condition. It shall also provide line supervision for each input by monitoring each input for abnormal open, grounded, or shorted conditions using dc current change measurements. The local processor shall report line supervision alarms to the central station. Alarms shall be reported for any condition that remains off normal at an input for longer than 500 milliseconds.

  Each alarm condition shall be transmitted to the central computer during the next interrogation cycle. The entry control local processor shall include the necessary software drivers to communicate with entry control field devices. Information generated by the entry control field devices shall be accepted by the local processor and automatically processed to determine valid identification of the individual present at the portal. Upon authentication of the credentials or information presented, the local processor shall automatically check privileges of the identified individual, allowing only those actions granted as privileges. Privileges shall include, but not be limited to, time of day control, day of week control, group control, and visitor escort control. The local processor shall maintain a date-time and location stamped record of each transaction. A transaction is defined as any successful or unsuccessful attempt to gain access through a controlled portal by the presentation of credentials or other identifying information.

- Outputs. Local processor outputs shall reflect the state of commands issued by the central station. The outputs shall be a form C contact and shall include normally open and normally closed contacts. The local processor shall have at least four (4) addressable outputs. The entry control local processor shall also provide control outputs to portal control devices.

- Communications. The local processor shall be able to communicate with the Central Station via RS485 or TCP/IP as a minimum. The system manufacturer shall provide strategies for downloading database information for panel configurations and cardholder data to minimize the required download time when using IP connectivity.

1. Processor Power Supply: Local processor and sensors shall be powered from an uninterruptible power source. The uninterruptible power source shall provide eight (8) hours of battery back-up power in the event of primary power failure and shall automatically fully recharge the batteries within twelve (12) hours after primary power is restored. If the facility is without an emergency generator, the uninterruptible power source shall provide 24 hours of battery backup power. There will be no equipment malfunctions or perturbations or loss of data during the switch from primary to battery power and vice versa. Batteries shall be sealed, non-outgassing type. The power supply shall be equipped with an indicator for ac input power and an indication for dc output power.

2. Auxiliary Equipment Power: A GFI service outlet shall be furnished inside the local processor's enclosure.

5.11 Field Processing Software: All field processing software described in this specification shall be furnished as part of the complete system.

A. Operating System: Each local processor shall contain an operating system that controls and schedules that local processor's activities in real time. The local processor shall maintain a point database in its memory that includes all parameters, constraints, and the latest value or status of all points connected to that local processor. The execution of local processor application programs shall utilize the data in memory resident files. The operating system shall include a real time clock function that maintains the seconds, minutes, hours, date and month, including day of the week. Each local processor real time clock shall be automatically synchronized with the central station at least once per day to plus or minus 10 seconds (the time synchronization shall be accomplished automatically, without operator action and without requiring system shutdown).

1. Startup: The local processor shall have startup software that causes automatic commencement of operation without human intervention, including startup of all connected Input/Output functions. A local processor restart program based on detection of power failure at the local processor shall be included in the local processor software. The startup software shall initiate operation of self-test

2. Operating Mode: Each local processor shall control and monitor inputs and outputs as specified, independent of communications with the central station or designated workstations. Alarms, status changes and other data shall be transmitted to the central station or designated workstations when communications circuits are operable.

If communications are not available, each local processor shall function in a stand-alone mode and operational data, including the status and alarm data normally transmitted to the central station or designated workstations shall be stored for later transmission to the central station or designated workstations. Storage for the latest 4000 events shall be provided at each local processor, as a minimum. Each local processor shall accept software downloaded from the central station. The panel shall support flash ROM technology to accomplish firmware downloads from a central location.

3. Failure Mode: Upon failure for any reason, each local processor shall perform an orderly shutdown and force all local processor outputs to a predetermined (failure mode) state, consistent with the failure modes shown and the associated control device.

B. Functions: Provide software necessary to accomplish the following functions, as appropriate, fully implemented and operational, within each local processor:

1. Monitoring of inputs.
2. Control of outputs.
3. Reporting of alarms automatically to the central station.
4. Reporting of sensor and output status to central station upon request.
5. Maintenance of real time, automatically updated by the central station at least once a day.
6. Communication with the central station.
7. Execution of local processor resident programs.
8. Diagnostics.
9. Download and upload data to and from the central station.

5.12 Interior Sensors and Control Devices: Interior sensor housing shall provide protection against dust, falling dirt, and dripping non-corrosive liquids.

A. Balanced Magnetic Switch (BMS): The BMS shall detect a ¼ inch of separating relative movement between the magnet and the switch housing. Upon detecting such movement, the BMS shall transmit an alarm signal to the alarm annunciation system.

1. BMS Subassemblies: The BMS shall consist of a switch assembly and an actuating magnet assembly. The switch mechanism shall be of the balanced magnetic type or triple-biased reeds to provide detection of tamper attempts. The switches shall provide supervision and pry timer capability. Each switch shall be provided with an over current protective device, rated to limit current to 80 percent of the switch capacity. Switches shall be rated for a minimum lifetime of 1,000,000 operations. The magnet assembly shall house the actuating magnet.

2. Housing: The housings of surface mounted switches and magnets shall be made of nonferrous metal and shall be weatherproof. The housings of recess mounted switches and magnets shall be made of nonferrous metal or plastic.

3. Remote Test: A remote test capability shall be provided. The remote test shall be initiated when commanded by the alarm annunciation system. The remote test shall activate the sensor's switch mechanism causing an alarm signal to be transmitted to the alarm annunciation system. The remote test shall simulate the movement of the actuating magnet relative to the switch subassembly.

B. Access/Secure Switches: An access/secure switch shall be used to place a protected zone in the ACCESS or SECURE mode. The switch shall consist of a double pull key-operated switch housed in a NEMA 12 equivalent enclosure. The switch shall disable zone sensor alarm outputs, but shall not disable tamper alarms, duress alarms, and other 24 hr. sensors.

5.13 Entry Control Devices:

A. Keypads: Entry control keypads shall use a unique combination of alphanumeric and other symbols as an identifier. Keypads shall contain an integral alphanumeric/special symbols keyboard with symbols arranged in ascending ASCII code ordinal sequence. Communications protocol shall be compatible with the local processor.

1. Keypad Display: Keypads shall include an LED or other type of visual indicator display and provide visual status indications and user prompts. The display shall indicate power on/off, and whether user passage requests have been accepted or rejected. The design of the keypad display or keypad enclosure shall limit the maximum horizontal and vertical viewing angles of the keypad. The maximum horizontal viewing angle shall be plus and minus 5 degrees or less off a vertical plane perpendicular to the plane of the face of the keypad display. The maximum vertical viewing angle shall be plus and minus 15 degrees or less off a horizontal plane perpendicular to the plane of the face of the keypad display.

2. Keypad Response Time: The keypad shall respond to passage requests by generating a signal to the local processor. The response time shall be 800 milliseconds or less from the time the last alphanumeric symbol is entered until a response signal is generated.

3. Keypad Power: The keypad shall be powered from the source as shown and shall not dissipate more than 150 Watts.

4. Keypad Mounting Method: Keypads shall be suitable for surface, semi-flush, pedestal, or weatherproof mounting as required.

5. Keypad Duress Codes: Keypads shall provide a means for users to indicate a duress situation by entering a special code.

B. Portal Control Devices:

1. Push-button Switches: Provide momentary contact, back lighted push buttons and stainless steel switch enclosures for each push button as shown. Switch enclosures shall be suitable for flush, or surface mounting as required. Push buttons shall be suitable for flush mount in the switch enclosures. The push button switches shall meet the requirements of NEMA 250 for the area in which they are to be installed. Where multiple push buttons are housed within a single switch enclosure, they shall be stacked vertically with each push button switch labeled with ¼ inch high text and symbols as required. The push button switches shall be connected to the local processor associated with the portal to which they are applied and shall operate the appropriate electric strike, electric bolt or other facility release device. The continuous current of the IDS circuit shall be no more than 50 percent of the continuous current rating of the device supplied. The push button switches shall have double-break silver contacts that will make 720 VA at 60 amperes and break 720 VA at 10 amperes.

2. Electric Door Strikes/Bolts: Electric door strikes/bolts shall be designed to remain secure in case of power failure. These facility interface devices shall use dc power to energize the solenoids. Electric strikes/bolts shall incorporate end of line resistors to facilitate line supervision by the system. If not incorporated into the electric strike or local controller, metal-oxide resistors (MOVs) shall be installed to protect the controller from reverse current surges. Electric strikes shall have a minimum forcing strength of 2300 lbs.

a. Solenoid: The actuating solenoid for the strikes/bolts furnished shall not dissipate more than 12 Watts and shall operate on 12 or 24 Volts dc. The inrush current shall not exceed 1 ampere and the holding current shall not be greater than 500 milliamperes. The actuating solenoid shall move from the fully secure to fully open positions in not more than 500 milliseconds.

b. Signal Switches: The strikes/bolts shall include signal switches to indicate to the system when the bolt is not engaged or the strike mechanism is unlocked. The signal switches shall report a forced entry to the system.

c. Tamper Resistance: The electric strike/bolt mechanism shall be encased in hardened guard barriers to deter forced entry.

d. Size and Weight: Electric strikes/bolts shall be compatible with standard door frame preparations.

e. Mounting Method: The electric door strikes/bolts shall be suitable for use with single and double door with mortise or rim type hardware as shown, and shall be compatible with right or left hand mounting.

f. Astragals: Astragal lock guards shall be installed to prevent tampering with the latch bolt of the locking hardware or the latch bolt keeper of the electric strike. The astragals shall bolt through the door using tamper-resistant screws. The astragals shall be made of 1/8 inch thick brass and are 11-1/4 inch high by 1-5/8 inch wide, with a 5/32 inch wide offset, at a minimum.

5.14 Entry Controls Software:

A. Interface Device: The entry control software shall control passage. The decision to grant or deny passage shall be based upon identifier data to be input at a specific location. If all conditions are met, a signal shall be sent to the input device location to activate the appropriate electric strike, bolt, electromagnetic lock or other type of portal release or facility interface device.

B. Operator Interface: Entry control operation shall be entirely automatic under control of the central station and local processors except for simple operations required for map display, alarm acknowledgment, zone and portal status change operations, audible or visual alarm silencing and audio annunciation. The system shall immediately annunciate changes in zone and portal status. The alarm printer shall print a permanent record of each alarm and status change. The map displays or graphics screens shall display the current status of system zones and portals. The central station shall immediately display the current status of any zone or portal upon command. While the system is annunciating an unacknowledged zone or portal alarm, keyboard operations at the central station, other than alarm acknowledgment, shall not be possible. The system shall provide the capability to change zone and portal status from alarm (after alarm acknowledgment) or access to secure; from alarm (after alarm acknowledgment) or secure to access, or from access to secure by simple control operations. If the operator attempts to change zone status to secure while there is an alarm output for that zone or portal, the system shall immediately annunciate an alarm for that zone or portal.

C. Entry Control Functions:

1. Multiple Security Levels: The system shall have multiple security levels. Each of the security levels shall be delineated by facility barriers. Access to each security level shall be through portals in the facility barriers using designated entry control procedures. The system shall provide at least 8 security levels. Any attempt to access an area beyond an individual's security level shall initiate an access denial alarm.

2. Immediate Access Change: The system shall provide functions to disenroll and deny access to an identifiers without consent of the individual or recovery of a credential. The design of the system shall provide entry change capability to system operators and managers with appropriate passwords at the system operator or enrollment consoles.

D. Electronic Entry Control system Capacities: The system shall be designed and configured to provide the following capacities:

1. Enrollees: The system shall be configured for 100 enrollees. The system shall provide a facility-tailorable reference file database containing personal, access authorization, identifier and verification data for each enrollee as required.

2. Transaction History file Size: The system capacity shall be at least the amount of transactions for the system during one (1) year without any loss of transaction data. Examples of transaction data that are to be retained are: each system alarm, event and status change including operator commands, and the time and date of each occurrence.

E. Entry Control System Alarms: The system shall annunciate an alarm when the following conditions occur. Alarms shall be annunciated at the console both audibly and visually. An alarm report shall also be printed on the system printer. The alarm annunciation shall continue until acknowledged by the system operator. Only one (1) control key shall be needed to acknowledge an alarm. The system shall control, monitor, differentiate, rank, annunciate, and allow operators to acknowledge, in real time, alarm signals generated by system equipment. The system shall also provide a means to define and customize the annunciation of each alarm type. The system shall use audio and visual information to differentiate the various types of alarms, each alarm type shall be assigned an audio and a unique visual identifier.

1. Duress: The system shall annunciate a duress alarm when a duress code is entered at a keypad or a duress switch is activated. Duress alarms shall be annunciated in a manner that distinguishes them from all other system alarms. Duress alarms shall not be annunciated or otherwise indicated locally nor shall a duress alarm cause any special or unusual indications at the portal or area initiating the duress alarm. As an option through programming, individual privileges may have the ability to be carried out in the same as an authorized entry to the protected area. Duress alarms shall only be annunciated at the central station and remote displays. Alarms shall be annunciated on the monitor and shall be logged on the printer.

2. Entry Denial: The system shall annunciate an alarm when an attempt has been made to pass through a controlled portal and entry has been denied.

3. Portal Open: The system shall annunciate an alarm when an entry controlled portal has been open longer than a predefined time delay. The time delay shall be adjustable, under operator control, over a range of at least one (1) second to one (1) minute with a maximum resolution of one (1) second. The system shall have the capability of resetting the door condition based upon the door monitoring position switch indicating opening and then close.

4. Strike Not Secured: The system shall annunciate an alarm when the strike at an entry controlled portal has been left unsecured longer than a predefined time delay and generate an entry control alarm. The time delay shall be adjustable, under operator control, over a range of at least one (1) second to one (1) minute with a maximum resolution of one (1) second. The system shall have the capability of resetting the door condition based upon the door monitoring position switch indicating opening and then close.

5. Alarm Shunting/System Bypass: The system shall provide a means to ignore operator selected alarm types at operator selected portals in order to allow standard entry control procedures to be bypassed (shunted). Predefined alarm shunting shall only be available to system operators with the proper password. The system shall also provide for redefined alarm shunting based upon time zones. This capability shall only apply to the entry control alarm type.

5.15 Wire and Cable: Provide all wire and cable not indicated as GDOE furnished equipment. Wiring shall meet NFPA 70 standard.

A. Above Ground Sensor Wiring: Sensor wiring shall be 20 AWG minimum, twisted and shielded, 2, 3, 4, or 6 pairs to match hardware. Multi-conductor wire shall have an outer jacket of PVC.

B. Direct Burial Sensor Wiring: Not permitted.

C. Local Area Network (LAN) Cabling: LAN cabling shall be in accordance with TIA-568-C.1, category 5e.

D. Cable Construction: All cable components shall withstand the environment in which the cable is installed for a minimum of 20 years.

E. Power Line Surge Protection: Equipment connected to alternating current circuits shall be protected from power line surges. Equipment protection shall withstand surge test waveforms described in IEEE C62.41.1 and IEEE C62.41.2. Fuses shall not be used for surge protection.

F. Sensor Device Wiring and Communication Circuit Surge Protection: Inputs shall be protected against surges induced on device wiring. Outputs shall be protected against surges induced on control and device wiring installed outdoors and as shown. Communications equipment shall be protected against surges induced on any communications circuits. Cables and conductors, except fiber optics, which serve as communications circuits from console to field equipment, and between field equipment, shall have surge protection circuits installed at each end. Protection shall be furnished at equipment, and additional triple electrode gas surge protectors rated for the application on each wire line circuit shall be installed within 3 feet of the building cable entrance. Fuses shall not be used for surge protection. The inputs and outputs shall be tested in both normal mode and common mode using the following two waveforms:

1. A 10-microsecond rise time by 1000 microsecond pulse width waveform with a peak voltage of 1500 Volts and a peak current of 60 amperes.

2. An 8-microsecond rise time by 20-microsecond pulse width waveform with a peak voltage of 1000 Volts and a peak current of 500 amperes.

G. Power Line Conditioners: A power line conditioner shall be furnished for the console equipment. The power line conditioners shall be of the ferro-resonant design, with no moving parts and no tap switching, while electrically isolating the secondary from the power line side. The power line conditioners shall be sized for 125 percent of the actual connected KVA load. Characteristics of the power line conditioners shall be as follows:

a. At 85 percent load, the output voltage shall not deviate by more than plus or minus 1 percent of nominal when the input voltage fluctuates between minus 20 percent to plus 10 percent of nominal.

b. During load changes of zero to full load, the output voltage shall not deviate by more than plus or minus 3 percent of nominal. Full correction of load switching disturbances shall be accomplished within five cycles. And 95 percent correction shall be accomplished within two cycles of the onset of the disturbance.

c. Total harmonic distortion shall not exceed 3.5 percent at full load.

5.16 Execution/Examination: Verify that site conditions are in agreement with the design package and report any changes in the site, or conditions that will affect performance of the system to the GDOE in a report as defined in paragraph Group II Technical Data Package. Do not take any corrective action without written permission from the GDOE.

5.17 General Requirements: Install all system components, including GDOE furnished equipment, and appurtenances in accordance with the manufacturer's instructions, IEEE C2 and as shown. Furnish necessary interconnections, services and adjustments required for a complete and operable system as specified and shown. Control signal, communications, and data transmission line grounding shall be installed as necessary to preclude ground loops, noise, and surges from adversely affecting system operation.

A. Installation: Install the system in accordance with the standards for safety. NFPA 70, UL 681, UL 1037 and UL 1076, and the appropriate installation manual for each equipment type. Components within the system shall be configured with appropriate service points to pinpoint system trouble in less than twenty (20) minutes. Conduit shall be rigid galvanized steel or as shown and a minimum of ½ inch in diameter. DTS shall not be pulled into conduits or placed in raceways, compartments, outlet boxes, junction boxes, or similar fittings with other building wiring. Flexible cords or cord connections shall not be used to supply power to any components of the system, except where specifically noted.

B. Enclosure Penetrations: Enclosure penetrations shall be from the bottom unless the system design requires penetrations from other directions. Penetrations of interior enclosures involving transitions of conduit from interior to exterior, and penetrations on exterior enclosures shall be sealed with rubber silicone sealant to preclude the entry of water. The conduit riser shall terminate in a hot-dipped galvanized metal cable terminator. The terminator shall be filled with an approved sealant as recommended by the cable manufacturer, and in a manner that does not damage the cable.

C. Cold Galvanizing: Field welds and/or brazing on factory galvanized boxes, enclosures, conduits, etc., shall be coated with a cold galvanized paint containing at least 95 percent zinc by weight.

D. Installation Software: Load software as specified and required for an operational system including data bases and specified programs. Upon successful completion of the endurance test, provide original and backup copies on optical disk of all accepted software, including diagnostics.

5.18 System Startup: Satisfaction of the requirements below does not relieve the Bidder of responsibility for incorrect installations, defective equipment items, or collateral damage as a result of Bidder work/equipment. Do not apply power to the system until after:

- System equipment items and DTS have been set up in accordance with manufacturer's instructions.
- A visual inspection of the system has been conducted to ensure that defective equipment items have not been installed and that there are no loose connections.
- System wiring has been tested and verified as correctly connected.
- System grounding and transient protection system s have been verified as properly installed.
- Power supplies to be connected to the system have been verified as the correct voltage, Phasing, and frequency.

5.19 Supplemental Bidder Quality Control: Provide the services of technical representatives who have working experience with all components and installation procedures of the installed system; and are approved by the GDOE superintendent or designee. These representatives shall be present on the job site during the preparatory and initial phases of quality control to provide technical assistance. The representative shall also be available on an as needed basis to provide assistance with follow-up phases of quality control. These technical representatives shall participate in the testing and validation for the system and shall provide certification that their respective system portions meet the contractual requirements.

A.20 **Training:**

A. General: No less than thirty (30) days prior to scheduled training, deliver lesson plans and training manuals for the training phases, including type of training to be provided, and a list of reference material, for GDOE approval. Conduct training courses for designated personnel in the maintenance and operation of the system as specified.

The training shall be oriented to the specific system being installed. Training manuals shall be delivered for each trainee with two (2) additional copies delivered for archiving at the project site. The manuals shall include an agenda, defined objectives for each lesson, and a detailed description of the subject matter for each lesson. An electronic copy of the manual shall be provided to the GDOE. Furnish audio-visual equipment and other training materials and supplies. Where the Bidder presents portions of the course by audio-visual material, copies of the audio-visual material shall be delivered to the GDOE either as a part of the printed training manuals or on the same media as that used during the training sessions. A training day is defined as eight (8) hours of classroom instruction, including two (2) 15-minute breaks and excluding lunchtime. Monday through Friday, during the daytime shift in effect at the training facility. For guidance in planning the required instruction, assume that attendees will have a high school education or equivalent and are familiar with Access Control System. Approval of the planned training schedule shall be obtained from the GDOE at least 30 days prior to the training.

B. Operator's Training I: The first course shall be taught at the project site for a period of up to five (5) consecutive training days at least 3 months prior to the scheduled performance verification test. A maximum of 12 personnel shall attend this course. Upon completion of this course, each student, using appropriate documentation, shall be able to perform elementary operations with guidance and describe the general hardware architecture and functionality of the system. This course shall include:

- General System hardware architecture.
- Functional operation of the system.
- Operator commands.
- Data base entry.
- Reports generation.
- Alarm reporting.
- Diagnostics.

C. Operator's Training II: The second course shall be taught at the project site for a period of up to five (5) consecutive training days during or after the Bidder's field testing, but before commencing the performance verification test. A maximum of 12 personnel shall attend the course. No part of the training given during this course will be counted toward completion of the performance verification test. The course shall include instruction on the specific hardware configuration of the installed system and specific instructions for operating the installed system. Upon completion of this course, each student shall be able to start the system, operate the system, recover the system after a failure, and describe the specific hardware architecture and operation of the system. Specific application of the results of this course should enable the students to proficiently monitor the alarm workstations during the performance e verification test.

D. Operator's Training III: The third course shall be taught while the endurance test is in progress for a total of 16 hours of instruction per student, in time blocks of four (4) hours. A maximum of twelve (12) personnel shall attend the course. The schedule of instruction shall allow for each student to receive individual instruction for a 4-hour period in the morning (or afternoon) of the same weekday. Schedule the activities during this period so that the specified amount of time will be available during the endurance test for instructing the students. The course shall consist of hands-on-training under the constant monitoring of the instructor. The instructor shall be responsible for determining the appropriate password to be issued to the student commensurate with each student's acquired skills at the beginning of each of these individual training sessions. Upon completion of this course, the students shall be fully proficient in the operation of the system.

F. System Manager Training: System managers shall be trained for at least three (3) consecutive days. The system manager training shall consist of the operator's training and the following:

1. Enrollment/deactivation.
2. Assignments of identifier data.
3. Assign operator password/levels.
4. Change database configuration.

5. System network configuration and management.
6. Modify graphics.
7. Print special or custom reports.
8. System backup.
9. Any other functions necessary to manage the system.

G. Maintenance Personnel Training: The system maintenance course shall be taught at the project site after completion of the endurance test for a period of five (5) training days. A maximum of five (5) personnel, designated by the GDOE, will attend the course. The training shall include:

1. Physical layout of each piece of hardware.

2. Troubleshooting and diagnostics procedures.

3. Component repair and/or replacement procedures.

4. Maintenance procedures and schedules to include system testing after repair.

5. Calibration procedures. Upon completion of this course, the students shall be fully proficient in the maintenance of the system.

6. Review of site-specific drawing package, device location, communication, topology, and flow.

5.21 Testing:

A. General Requirements for Testing: Provide personnel, equipment, instrumentation, and supplies necessary to perform site testing. The GDOE

B. Contractor's Field Testing: Calibrate and test all equipment verify DTS operation, place the integrated system I service, and test the integrated system. Test installed ground rods as specified in IEEE 142. Deliver a report describing results of functional tests, diagnostics, and calibrations, including, written certification to the GDOE that the installed complete system has been calibrated, tested, and is ready to begin performance verification testing. It is recommended that the Bidder use the approved performance verification test as a guideline when the field test is conducted.

C. Performance Verification Test: Demonstrate that the completed system complies with the contract requirements. Using approved test procedures, all physical and functional requirements of the project shall be demonstrated and shown. The performance verification test, as specified, shall not be started until after receipt by the Bidder of written permission from the GDOE, based on the Bidder's written report. The report shall include certification of successful based on the bidder's written report. The report shall include certification of successful completion of testing as specified in paragraph Bidder's Field Testing and upon successful completion of training as specified. The GDOE may terminate testing at any time when the system fails to perform as specific. Upon termination of testing by the GDOE or by the Bidder, commence an assessment period as described for Endurance Testing Phase II. Upon successful completion of the performance verification test, deliver test reports and other documentation as specified to the GDOE prior to commencing the endurance test.

D. Endurance Test:

1. General: Demonstrate system reliability and operability at the specified throughput rates for each portal, and the Type I and Type II error rates specified for the completed system. Calculate false alarm rates and the system shall yield false alarm rates within the specified maximums at the specified probability of detection. The endurance test shall be conducted in phases as specified.

The endurance test shall not be started until the GSOE notifies the Bidder, in writing, that the performance verification test is satisfactorily completed, training as specified has been completed, and correction of all outstanding deficiencies has been satisfactorily completed. Provide 1 operator to operate the system 24 hours per day, including weekends and holidays, during Phase I and Phase III endurance testing in addition to any GDOE personnel that may be made available. The GDOE may terminate testing at any time the system fails to perform as specified. Upon termination of testing by the GDOE or by the Bidder, commence an assessment period as described for Phase II. Verify the operation of each terminal device during the last day of the test. Upon successful completion of the endurance test deliver test reports and other documentation as specified to the GDOE prior to acceptance of the system.

2. Phase I testing: The test shall be conducted 24 hours per day for fifteen (15) consecutive calendar days, including holidays, and the system shall operate as specified. No repairs may be made during this phase of testing unless authorized by the GDOE in writing. If the system experiences no failures during Phase I testing, the Bidder may proceed directly to Phase III testing after receipt of written permission from the GDOE.

3. Phase II Assessment: After the conclusion of Phase I, identify all failures, determine causes of all failures, and deliver a written report to the GDOE. The report shall explain in detail the nature of each failure, corrective action taken, results of tests performed and shall recommend the point at which testing should be resumed. After delivering the written report, convene a test review meeting at the jobsite to present the results and recommendations to the GDOE. The meeting shall not be scheduled earlier than five (5) business days after receipt of the report by the GDOE. As a part of this test review meeting, demonstrate that all failures have been corrected by performing appropriate portions of the performance verification test. Based on the Bidder's report and the test review meeting, the GDOE will determine the restart date, or may require that Phase I be repeated. If the retest is completed without any failures, the Bidder may proceed directly to Phase III testing after receipt of written permission from the GDOE.

4. Phase III Testing: The test shall be conducted 24 hours per day for fifteen (15) consecutive calendar days, including holidays, and the system shall operate as specified. Make no repairs during this phase of testing unless authorized by the GDOE in writing.

5. Phase IV Assessment: After the conclusion of Phase III, identify all failures, determine root causes of failures, repair failures, and deliver a written report to the GDOE. The report shall explain in detail the nature of each failure, corrective action taken, results of tests performed ad shall recommend the point at which testing should be resumed. After delivering the written report, convene a test review meeting at the jobsite to present the results and recommendations to the GDOE. The meeting shall not be scheduled earlier than five (5) business days after receipt of the report by the GDOE. As a part of this test review meeting, demonstrate that all failures have been corrected by repeating appropriate portions of the performance verification test. Based on the Bidder's report and the test review meeting, the GDOE will determine the restart date, and may require that Phase III be repeated. Do not commence any required retesting until after receipt of written notification by GDOE. After the conclusion f any retesting which the GDOE may require, the Phase IV assessment shall be repeated as if Phase III had just been completed.

6. Exclusions: The Bidder will not be held responsible for failures in system performance resulting from the following:

   - An outage of the main power in excess of the capability of any backup power source, provided that the automatic initiation of all backup sources was accomplished and that automatic shutdown and restart of the Access Control System performed as specified.

- Failure of a GDOE furnished communications circuit, provide that the failure was not due to Bidder furnished equipment, installation or software.
- Failure of existing GDOE owned equipment, provide that the failure was not due to Bidder furnished equipment, installation, or software.
- The occurrence of specified nuisance alarms.
- The occurrence of specified environmental alarms.

Part VI. Closed Circuit Television System (CCTV)

6.1 Standard Products Material and equipment shall be the standard products of a manufacturer regularly engaged in the manufacture of such products. Items of equipment shall essentially duplicate equipment that have been in satisfactory use at least 2 years prior to bid opening. Equipment shall be supported by successful bidder for a period of one (1) year from the time of acceptance by GDOE. Maximum response time for service shall be no more than one hour from the time a report is submitted.

6.2 System Description:

A. General: A closed circuit television system (CCTV) is required to provide security coverage for the exhibit areas, valuable storage areas and for the general monitoring of the daily operations of the facility and surrounding grounds. The CCTV system should be flexible, easily expandable and fully capable of providing real-time video. The system should be supported with Digital Video Manager (DVM) capability. Configure the system as described and shown. All television equipment shall conform to CEA 170 specifications. Include in the system all connectors, adaptors, ad terminators, necessary to interconnect all equipment. Supply all cabling necessary to interconnect the closed circuit television (CCTV) equipment installed in the Security Center. Interface the CCTV system with the intrusion detection system (IDS) and access control system (ACS).

B. Configuration: CCTV camera viewing angles and desired field of view will be coordinated with architectural and exhibit elements and with GDOE's operational staff. CCTV system configuration of ACS automatic alarm calls up and preset views shall provide system operators a live view of areas surrounding alarms.

C. System Overall Reliability Requirement: Configure and install the system, including all components and appurtenances, to yield a mean time between failure (MTBF) of at least 10,000 hours.

D. Power Line Surge Protection: Protect all equipment connected to AC power line surges. Equipment protection shall withstand surge test waveforms described in IEEE C62.41.1 and IEEE C62.41.2 Fuse shall not be used for surge protection.

E. Video and Sync Signal Transmission Line Surge Protection: All cable, except fiber optic cable, used for sync or video signal transmission shall include protective devices to safeguard the CCTV equipment against surges. The surge suppression device shall not attenuate or reduce the video or sync signal under normal conditions. The surge suppression device shall be capable of dissipating not less than 1500 watts for 1 millisecond, and the response time from zero volts to clamping shall not be greater than 5 nanoseconds. Fuses shall not be used for surge protection.

F. Control Line Surge Protection: All cables and conductors, except fiber optic cables, which serve as communication, control, or signal lines shall be protected against surges and shall have surge protection installed at each end. Protection shall be furnished at the equipment and additional triple electrode gas surge protectors rated for the application on each wireline circuit shall be installed within 3 feet of the building cable entrance. Fuses shall not be used for surge protection. Test the inputs and outputs in both normal mode and common mode using the following waveforms:

1. A 10 microsecond rise time by 1000 microsecond pulse width waveform with a peak voltage of 1500 volts and a peak current of 60 amperes.

2. An 8 microsecond rise time by 20 microsecond pulse width waveform with a peak voltage of 1000 volts and a peak current of 500 amperes.

G. Power Line Condit9oners: Furnish a power line conditioner for the security console CCTV equipment. The power line conditioner shall be sized for 125 percent of the actual connected KVA load.

H. Video and Control Signal Data Transmission Media: Provide a video and data and control, Communications between servers, workstations, and cameras will utilize a dedicated local area network (LAN). All network-based cameras will be connected to the LAN using CAT 5e copper cabling at a minimum.

I. Electrical Requirements: Fixed cameras will be supplied with power over the network using standard power over Ethernet (PoE) technology. However, PTZ cameras, which typically require more power than PoE can provide, will require a separate power distribution system. Outdoor cameras will be powered using standard 120 VAC due to additional power requirements associated with heating/moisture control elements.

J. Uninterrupted Power Supply: All electrical and electronic equipment in the console shall be powered from a UPS. The UPS shall be sized to provide at least 24 hours battery back-up in the event of primary failure. Batteries shall be sealed non-outgassing type.

6.3 Delivery of Technical Data and Computer Software:

A. Group I Technical Data Package:

1. System Drawings: The data package shall include the following:

a. System block diagram.
b. CCTV system console installation, block diagrams, and wiring diagrams.

c. Security center CCTV equipment installation, interconnection with console equipment, block diagrams and wiring diagrams.

d. Remote control/monitoring statin installation, interconnection to security center including block diagrams and wiring diagrams.

e. Camera wiring and installation drawings.

f. Pan/tilt mount wiring and installation drawings.

g. Interconnection with video signal transmission system, block diagrams and wiring diagrams.

h. Surge protection device installation.

i. Details of interconnection with Access Control System.

j. Camera viewing angles and field of view drawings coordinated with architectural and exhibit elements.

2. Manufacturers' Data: The data package shall include manufacturers' data for all materials and equipment and security center equipment provided under this specification.

3. System Description and Analyses: The data package shall include complete system descriptions, analyses and calculations used in sizing the equipment required by these specifications. Descriptions and calculations shall show how the equipment will operate as a system to meet the performance of this specification The data package shall include the following:

a. Switcher matrix size.
b. Camera call-up response time.
c. System start-up and shut-down operations.
d. Switcher programming instructions.
e. Switcher operating and maintenance instructions.
f. Manuals for CCTV equipment.
g. Data entry forms.

4. Software Data: The data package shall consist of descriptions of the operation and capability of system and application software as specified. Contractor shall provide required software licenses for all servers, workstations, cameras, storage devices.

5. Overall System Reliability Calculations: The data package shall include all manufacturers' reliability data and calculations required to show compliance with the specified reliability. The calculations shall be based on all CCTV equipment associated with one camera circuit and the console CCTV equipment, excluding the data transmission media (DTM).

6. Certifications: all specified manufacturer's certifications shall be included with the data package.

B. Group II Technical Data Package: Verify that site conditions are in agreement with the design package. Submit to the GDOE a report documenting changes to the site, or conditions that affect performance of the system to be installed. For those changes or conditions which affect system installation or performance provide (with the report) specification sheets, or written functional requirements to support the findings, and a cost estimate to correct the deficiency. Do not correct any deficiency without written permission form the GDOE.

C. Group III Technical Data Package: Prepare test procedures and reports for the pre-delivery test. Submit the pre-delivery test procedures, in Part 2, to the GDOE for approval. Schedule the pre-delivery test after receipt of written approval of the pre-delivery test procedures. The final pre-delivery test report shall be delivered after completion of the pre-delivery test.

D. Group IV Technical Data Package: Prepare test procedures and reports for the performance verification test and the endurance test. Deliver the performance verification test and endurance test procedures to the GDOE for approval. Schedule the tests after receipt of written approval of the test procedures. Provide a report detailing the results of the field test and a video tape as specified in paragraph "Contractor's Field testing." The final performance verification and endurance test report shall be delivered after completion of the tests.

1. Operation and Maintenance Manuals: Provide 5 draft copies and an electronic copy of the operation and maintenance manuals, as specified for the Group V technical data package, shall be delivered to the GDOE prior to beginning the performance verification test for use during site testing.

2. Training Documentation: Lesson plans and training manuals for the training phases, including type of training to be provided with a sample training report, and a list of reference material, shall be delivered for approval.

3. Data Entry: Enter all data needed to make the system operational. Delivery the data to the GDOE on data entry forms, utilizing data from the contract documents, Bidder's field surveys, and all other pertinent information in the Bidder's possession required for complete installation of the data base. Identify and request form the GDOE, any additional data needed to provide a complete and operational CCTV system. The completed forms shall be delivered to the GDOE for review and approval at least 90 days prior to the Bidder's, scheduled need date.

4. Graphics: Where graphics are required and are to be delivered with the system, create and install all graphics needed to make the system operational. Graphics shall have sufficient level of detail for the system operator to assess the alarm. Supply hard copy, color examples at least 8 by 10 inches in size, of each type of graphic to be used for the completed CCTV system. If the video switcher does not use a monitor for display of system information, provide examples of the video annotation used for camera identification. The graphics examples shall be delivered to the GDOE for review and approval at least 90 days prior to the Bidder's scheduled need date.

E. Group V Technical Data Package: Final copies of each of the manufacturer's commercial manuals arranged as specified bound in hardback, loose-leaf 3-ring binders, shall be delivered to the GDOE within 30 days after completing the endurance test. The draft copy used during the site testing shall be updated prior to final delivery of the manuals. Each manual's contents shall be identified on the cover. The manual shall include names, addresses, and telephone numbers of each subcontractor installing equipment and systems, and nearest service representative for each item of equipment for each system. The manuals shall have a table of contents and tab sheets. Tab sheets shall be placed at the beginning of each chapter or section and at the beginning each appendix. The final copies delivered after completion of the endurance test shall include all modifications made during installation, checkout, and acceptance.

1. Functional Design Manual: The function design manual shall identify the operational requirements for the system and explain the theory of operation, design philosophy, and specific functions. A description of hardware and software functions, interfaces and requirements shall be included for all system operating modes.

2. Hardware Manual: A manual shall describe all equipment furnished, including:

   a. General hardware description and specifications.
   b. Installation and checkout procedures.
   c. Equipment electrical schematics and layout drawings.
   d. System schematics and wiring lists.
   e. System setup procedures.
   f. Manufacturer's repair parts list indicating sources of supply.
   g. Interface definition.

3. Software Manual: The software annual shall describe the functions of all software, and shall include all other information necessary to enable proper loading, testing and operation, including:

    a. Definitions of terms and functions.
    b. Procedures for system boot-up.
    c. Description of using the programs.
    d. Description of required operational sequences.
    e. Directory of all disk files.
    f. Description of all communications protocols, including data formats, command characters, and a sample of each type of data transfer.

4. Operator's Manual: The operator's manual shall explain all procedures and instructions for operation of the system including:

    a. Video switcher.
    b. Video multiplexer.
    c. Cameras and video recording equipment.
    d. Use of the software.
    e. Operator commands.
    f. System start-up and shut-down procedures.
    g. Recovery and restart procedures.

6.4 Submittals: The Security System Bidder's DOR – Designer of Record will review and approval submittals requiring special review in this section. Drawing and descriptive data shall be approved prior to procurement fabrication, and installation. A schedule of required submittals shall be prepared to be integrated with the overall construction management schedule to ensure adequate review and necessary corrective work before installation.

Submittals shall include wiring diagrams and installation details of equipment indicating proposed locations, layout and arrangement, control panels, accessories, piping, ductwork, and other items that must be shown to ensure a coordinated installation. Wiring diagrams shall identify circuit terminals and indicate the internal wiring for each item of equipment and the interconnection between each item of equipment. Drawings shall indicate adequate clearance for operation, maintenance, and replacement of operating equipment devices. Submittals shall include the nameplate data, size, and capacity. Submittals shall also include applicable federal, industry, and technical society publication references.

Bid Submittals shall include:

- Site Survey Report

- Shop Drawings:
  Graphics
  System Layout Plan

- Product Data:
  CCTV Technical Data Packages
  Training Documentation
  Software Updates
  Copies of the Audio-Visual Materials

- Test Reports:
  Performance Verification Test
  Endurance Test Procedures
  Test Procedures and Reports
  Original copies of all Test Data
  Report describing All Results

- Certificates:
  Supplemental Bidder Quality Control
  Letter of Certification

- Manufacturer's Instructions:
  Group V Technical Data Package

- Operation and Maintenance Data:
  Operation and Maintenance Manuals Operator's Training Report

- Closeout Submittals:
  Data Entry

6.5 Quality assurance:

A. Pre-delivery testing: Perform pre-delivery testing, and adjustment of the completed CCTV system. Provide all personnel, equipment, instrumentation, and supplies necessary to perform all testing. Written notification of planned testing shall be given to the GDOE at least 14 days prior to the test, and in no case shall notice be given until after the Bidder has received written approval of the specific test procedures.

B. Test Procedures and Reports: Test p5rocedures shall explain, in detail, step-by-step actions and expected results demonstrating compliance with the requirements of the specification. Test reports shall be used to document results of the tests. Reports shall be submitted to the GDOE within 7 days after completion of each test.

C. Layout Drawings: Maintain a separate set of drawings, elementary diagrams and wiring diagrams of the CCTV system to be used for layout drawings. This set shall be accurately kept up to date with all changes and additions to the CCTV system and shall be delivered to the GDOE with the final endurance test report. In addition to being complete and accurate, this set of drawings shall be kept neat and shall not be used for installation purposes. Upon completion of the final system drawings, a representative of the GDOE will review the final system work with the Bidder. If the final system work is not complete, the Bidder will be so advised and shall complete the work as required. Final drawings submitted with the endurance test report shall be furnished drawings on mylar or vellum, and as AutoCAD files and a pdf file copy on optical disk.

6.6 Environmental Requirements:

A. Field Equipment: The cameras and all other field equipment shall be rated for continuous operation under ambient environmental conditions of up to 20 degrees F using no auxiliary heating or cooling equipment. Equipment shall be rated for continuous operation under the ambient environmental temperature, humidity, wind loading, and vibration conditions specified or encountered for the installed location.

B. Security Center Equipment: security Center and remote control/monitoring station equipment shall, unless designated otherwise, be rated for continuous operation under ambient environmental conditions of 60 to 85 degrees F and a relative humidity of 20 to 80 percent.

C. Existing Conditions: Visit the site and verify that site conditions are in agreement with the design package. Report all changes to the site or conditions that will affect performance of the system to the GDOE in a report as defined in paragraph Group II Technical Data Package. Do not take any corrective action without written permission from the GDOE.

6.7 Maintenance and Service:

A. General Requirements: Provide all required services, material and equipment necessary for the work to maintain the entire CCTV system in an operational state as specified for a period of 1 year after completion of the endurance test. Impacts on facility operations shall be minimized when performing scheduled adjustments or other unscheduled work.

B. Description of Work: The adjustment and repair of the CCTV system includes all computer equipment, software updates, signal transmission equipment, and video equipment. Provide the manufacturer's required adjustments and all other work necessary.

C. Personnel: Service personnel shall be qualified to accomplish all work promptly and satisfactorily. The GDOE shall be advised in writing of the name of the designated service representative, and of any changes in personnel.

D. Schedule of Work: Perform two inspections at 6-month intervals or less. This work shall be performed during regular working hours, Monday through Friday, excluding legal holidays. These inspections shall include:

1. Visual checks and operational tests of the CPU, switcher, peripheral equipment, interface panels, recording devices, monitors, video equipment electrical and mechanical controls, and a check of the picture quality from each camera.

2. Run system software and correct all diagnosed problems.

3. Resolve any previous outstanding problems.

6.8 Emergency Service: The GDOE will initiate service calls when the CCTV system is not functioning properly. Qualified personnel shall be available to provide service to the complete CCTV system. The GDOE shall be furnished with a telephone number where the service supervisor can be reached at all times. Service personnel shall be at the site within 24 hours after receiving a request for service.

6.9 Operation: Performance of scheduled adjustments and repair shall verify operation of the CCTV system as demonstrated by the applicable portions of the performance verification test.

6.10 Records and Logs: Keep records and logs of each task in hard copy and electronic file format and organize cumulative records for each major component, and for the complete system chronologically. Maintain a continuous log for all devices containing calibration, repair, and programming data. Keep logs available for inspection on site, demonstrating that planned and systematic adjustments and repairs have been accomplished for the CCTV system.

6.11 Work Requests: Separately record each service call request, as received. The form shall include the serial number identifying the component involved, its location, date and time the call was received, nature of trouble, names of the service personnel assigned to the task, instructions describing what has to be done, the amount and nature of the materials to be used, the time and date work started, and the time and date of completion. Deliver a record of the work performed within 5 days after work is completed.

6.12 System Modifications: Make any recommendations for system modification in writing to the GDOE. No system modifications, including operating parameters and control settings, will be made without prior approval of the GDOE. Incorporate any modifications made to the systems into the operations and maintenance manuals, and other documentation affected.

6.13 Submit all software updates to the GDOE for approval. Upon GDOE approval, updates shall be accomplished in a timely manner, fully coordinated with the CCTV system operators, operation in the system verified, and incorporated into the operations and maintenance manuals, and software documentation. There shall be at least one scheduled update near the end of the first year's warranty period, at which time install and validate the latest released version of the manufacturer's software.

6.14 Warranty: Provide a two (2) year warranty for all parts and labor to include all software updates during the warranty period. The system shall be supported by service organizations in Guam in order to render satisfactory service to the equipment on a regular and emergency basis during the warranty period of the contract. Maximum response time for service shall be 1 hour.

6.15 Maintenance Manual: The maintenance manyal shall describe maintenance for all equipment including inspection, periodic preventive maintenance fault diagnosis, and repair or replacement of defective components.

Part 6.2 Products:

6.2.1 Materials and Equipment: Provide system hardware and software components produced by Manufacturers regularly engaged in the production of CCTV equipment. Units of the same type of equipment shall be products of a single manufacturer. All material and equipment shall be new and currently in production. Each major component of equipment shall have the manufacturer's name and address, and the model and serial number in a conspicuous place. Equipment located at the security center or a remote control/monitoring station shall be rack mounted as shown. Both Television and Computing, devices shall comply with 47 CFR 15, Subpart B.

A. Fungus Treatment: system components located in fungus growth inductive environments shall be completely treated for fungus resistance. Treating materials containing a mercury bearing fungicide shall not be used. Treating materials shall no increase the flammability of the component or surface being treated. Treating materials shall not cause skin irritation or other injury to personnel handling it during fabrication, transportation, operation, maintenance, or during the use of the finished items when used for the purpose intended.

B. Soldering: All soldering shall be done in accordance with standard industry practices.

6.2.2 Enclosures: Provide metallic enclosures as needed for equipment not housed in racks or supplied with a housing. The enclosures shall be as specified or shown.

A. Interior: Enclosures to house equipment in an interior environment shall meet the requirements of NEMA 250 Type 12.

B. Exposed-to-Weather: Enclosures to house equipment in an outdoor environment shall meet the requirements of NEMA 250 Type 4X.

C. Corrosion-resistant: Enclosures to house equipment in a corrosive environment shall meet the requirements of NEMA 250 Type 4X.

6.2.3 Tamper Provisions: Enclosures, cabinets, housings (other than environmental camera housings), boxes, raceways, conduits, and fittings of every description having hinged doors or removable covers, and which contain any part of the CCTV equipment or power supplies, shall be provided with cover operated, corrosion-resistant tamper switches, arranged to initiate an alarm signal when the door or cover is moved. Tamper switches shall be mechanically mounted to maximize the defeat time when enclosure covers are opened or removed. The enclosure and the tamper switch shall function together to not allow direct line of sight to any internal components and tampering with the switch or the circuits before the switch activates. Tamper switches shall be inaccessible until the switch is activated; have mounting hardware concealed so that the location of the switch cannot be observed from the exterior of the enclosure; be connected to circuits which are under electrical supervision at all times, irrespective of the protection mode in which the circuit is operating; shall be spring-loaded and held in the closed position by the door cover; and shall be wired so that they break the circuit when the door or cover is disturbed. Tamper switches on the doors which must be opened to make routine maintenance adjustments to the system and to service the power supplies shall be push/pull-set, automatic reset type.

A. Enclosure Covers: Covers of pull and junction boxes provided to facilitate installation of the system need not be provided with tamper switches if they contain no splices or connections, but shall be protected by tack welding or brazing the covers in place. Zinc labels shall be affixed to such boxes indicating they contain no connections. These labels shall not indicate that the box is part of the security system.

B. Conduit-Enclosure Connections: All conduit-enclosure connections shall be protected by tack welding or brazing the conduit to the enclosure. Tack welding or brazing shall be done in addition to standard conduit-enclosure connection methods as described in NFPA 70

6.2.4 System Integration: The CCTV system shall provide automatic, alarm actuated call-up of the camera associate with the alarm zone. Equipment shall be supplied with all adapters, terminators, cables, main frames, card cages, power supplies, rack mounts, and appurtenances as needed.

6.2.5 Solid State Cameras:

A. High Resolution IP Camera: All electronic components and circuits shall be solid state. Signal-to-noise ratio shall not be less than 50 dB unweighted. The camera shall exhibit no geometric distortion. The lens mount shall be a C-mount, and the camera shall have a back focus adjustment. The camera shall operate up to 131 degrees F without auxiliary heating or cooling, and with no change in picture quality or resolution. Camera types shall be digital and will include both fixed and pan/tilt/zoom (PTZ). All cameras will be network (IP) based, or have network encoders located near the cameras. Bidder shall coordinate with the GDOE to determine camera types desired. Fixed cameras will be supplied with power over the network using standard power over Ethernet (PoE) technology. However, PTZ cameras, which typically require more power than PoE can provide, will require a separate power distribution system. Outdoor cameras will be powered using standard 120 VAC connected to emergency power generators due to additional power requirements associated with heating/moisture control elements.

1. Solid State Image Array: The camera shall have a solid state array, and the picture produced by the camera shall be free of blemishes. The camera shall provide not less than 460 lines of horizontal resolution, and resolution shall not vary over the life of the camera. The imager shall have at least 768 horizontal x 494 vertical active picture elements.

2. Sensitivity: Camera shall provide full video output with the infrared cut-off filter installed, without camera automatic gain, and a scene reflectivity of 75 percent using an f/1.2 lens given a camera faceplate illumination at 3200K of 0.2 footcandle minimum.

3. Camera Synchronization: The camera shall have an input for external sync, and shall automatically switch over to internal sync if external sync is not present. The camera shall also have the capability of synchronization by line-locking to the AC power line frequency at the zero crossing point, and shall provide not less than plus or minus 90 degrees of vertical phase adjustment.

4. Connectors: Cameras with lenses having auto iris, manual iris, or zoom and focus functions shall be supplied with connectors and wiring as needed to operate the lens functions. Cameras with integral fiber optic video transmitters shall have straight-tip bayonet type fiber optic video output connectors. A connector shall be provided for external sync input.

5. Automatic Circuits: the camera shall have circuitry for through the lens (TTL) white balancing, fixed white balancing, and automatic gain control.

B. Dome Cameras:

1. Interior Dome Camera System: An interior dome cameras system shall be provided with integral camera installed and integrated into the dome housing. The camera shall meet the requirements of Paragraph: High resolution color IP Camera as shown or specified. The dome housing shall be nominally 6 inches and shall be furnished in a pendant mount or ceiling mount as shown. The lower dome shall be tinted acrylic and shall have a light attenuation factor of not more than 1 f-stop. The housing shall be equipped with integral pan/tilt complete with wiring, wiring harnesses, connectors, receiver/driver, pan/tilt control system, pre-position cards, or any other hardware and equipment as needed to provide a fully functional pan/tilt dome. The pan/tilt shall have heavy duty bearings and hardened steel gears. The pan/tilt shall be permanently lubricated. The motors shall be thermally or impedance protected against overload damage. Pan movement shall be 360 degrees and tilt movement shall not be less than plus and minus 90 degrees. Pan speed shall not be less than 20 degrees per second and tilt speed shall not be less than 10 degrees per second. There shall not be less than 64 preset positions, with positioning speeds of at least 360 degrees per second

in the automatic mode, and not less than 120 degrees pre second in the manual positioning mode, with a positioning accuracy of plus or minus ½ degree. Each set of preset position data shall include auto focus, auto iris, pan, tilt, and zoom functions. The system shall be able to automatically scan between any two electronically-set limits, and shall be able to operate in the "tour" mode covering up to all presets in a user defined sequence. The dome system shall withstand temperature ranges up to 122 degrees f over a humidity range of 0 to 90 percent, non-condensing.

2. Exterior dome Camera system: An exterior dome camera system shall be provided with integral camera installed and integrated into the dome housing. The camera shall have a minimum horizontal resolution of 425 lines (color). The dome housing shall be nominally 6 inches and shall be furnished in a NENA 4 pendant mount, pole mount ceiling mount surface mount, or corner munt as shown. The housing shall be constructed to be dust and water tight, and fully operational in 100 percent condensing humidity. The housing shall be equipped with supplementary camera mounting blocks or supports as needed to position the specified camera and lens to maintain the proper optical centerline. All electrical and signal connections required for operation of the camera and lens shall be supplied. The housing shall protect the internal drives, positioners, and camera from the environment encountered for camera operation. The lower dome shall be tinted acrylic and shall have a light attenuation factor of not more than 1 f-stop. The housing shall be equipped with integral pan/tilt

Complete with wiring, wiring harnesses, connectors, receiver/driver, pan/tilt control system, pre-position cards, or any other hardware and equipment as needed to provide a fully functional pan/tilt dome. The pan/tilt shall have heavy duty bearings and hardened steel gears. The pan/tilt shall be permanently lubricated. The motors shall be thermally or impedance protected against overload damage. Pan movement shall be 360 degrees and tilt movement shall not be less than plus and minus 90 degrees. Pan speed shall not be less than 20 degrees per second, and tilt speed shall not be less than 10 degrees per second.

There shall not be less than 99 preset positions, with positioning speeds of at least 360 degrees per second in the automatic mode, and not less than 120 degrees pre second in the manual positioning mode, with a positioning accuracy of plus or minus ½ degree. Each set of preset position data shall include auto focus, auto iris, pan, tilt, and zoom functions. The system shall be able to automatically scan between an two electronically-set limits, and shall be able to operate in the "tour" mode covering up to all presets in a user defined sequence. The dome system shall withstand temperature range up to 122 degrees F over a humidity range of 0 to 90 percent, non-condensing.

6.2.6 Camera Lenses: Camera lenses shall be all glass with coated optics. The lens mount shall be a C or CS mount, compatible with the cameras selected. The lens shall be supplied with the camera, and shall have a maximum f-stop opening of f/1.2 or the maximum available for the focal length specified. The lens shall be equipped with an auto-iris mechanism unless otherwise specified. Lenses having auto iris, manual iris, or zoom and focus functions shall be supplied with connectors, wiring, receiver/drivers, and controls as needed to operate the lens functions. Lenses shall have sufficient circle of illumination to cover the image sensor evenly. Lenses shall not be used on a camera with an image format larger than the lens is designed to cover. Lens focal lengths shall be as shown or specified in the manufacturer's lens selection tables.

6.2.7 Camera Housing and Mounts: The camera and lens shall be enclosed in a tamper resistant housing as specified below. Any ancillary housing mounting hardware needed to install the housing at the camera location shall be provided as part of the housing. The camera and lens contained in a camera housing shall be installed on a camera support as shown. Any ancillary mounting hardware needed to install the support and to install the camera on the support shall be provided as part of the support. The camera support shall be capable of supporting the equipment to be mounted on it including wind and ice loading normally encountered at the site.

A. Environmentally Sealed Camera Housing: The housing shall be designed to provide a condensation free environment for camera operation. The housing shall be constructed to be dust and water tight, and fully operational in 100 percent condensing humidity.

The housing shall be purged of atmospheric air and pressurized with dry nitrogen, shall be equipped with a fill valve, overpressure valve, and shall have a humidity indicator visible from the exterior. Housing shall not have a leak rate greater than 2 psi at sea level within a 90 day period. The housing shall be equipped with supplementary camera mounting blocks or supports as needed to position the specified camera and lens to maintain the proper optical centerline. All electrical and signal connections required for operation of the camera and lens shall be supplied. The housing shall provide the environment needed for camera operation, and shall keep the viewing window free of fog. The housing shall be equipped with a sunshield, and both the housing and the sunshield shall be white. A mounting bracket which can be adjusted to center the weight of the housing and camera assembly shall be provided as part of the housing.

B. Indoor Camera Housing: The housing shall be designed to provide a tamper resistant enclosure for indoor camera operation. The housing shall be equipped with tamper proof latches, and shall be supplied with the proper mounting brackets for the specified camera and lens. The housing and appurtenances shall be a color that does not conflict with the building interior color scheme.

C. Interior Mount: The camera mount shall be suitable for either wall or ceiling mounting and shall have an adjustable head for mounting the camera. The wall mount and head shall be constructed of aluminum or steel with a corrosion-resistant finish. The head shall be adjustable for 360 degrees of pan, and not less than 90 degrees of tilt.

D. Low Profile Ceiling Mount: A tamperproof ceiling housing shall be provided for the camera. The housing shall be low profile and shall be suitable for replacement of 2 by 2 foot ceiling tiles. The housing shall be equipped with a camera mounting bracket and shall allow a 360 degree viewing setup.

E. Interior Dome Housing: An interior dome housing shall be provided for each camera as shown. The dome housing shall be a pendant mount, pole mount, ceiling mount, surface mount, or corner mount as shown. The lower dome shall be black opaque acrylic and shall have a light attenuation factor of not more than 1 f-stop. The housing shall be equipped with integral pan/tilt complete with wiring, wiring harnesses, connectors, receiver/driver, pant/tilt control system, pre-position cards, or any other hardware and equipment as needed to provide a fully functional pan/tilt dome. The pan/tilt shall have heavy duty bearings and hardened steel gears. The pan/tilt shall be permanently lubricated. The motors shall be thermally or impedance protected against overload damage. Pan movement shall be 360 degrees and tilt movement shall not be less than plus and minus 90 degrees. Pan speed shall not be less than 20 degrees per second, and tilt speed shall not be less than 10 degrees per second.

F. Exterior Dome Housing: An exterior dome housing shall be provided for each camera as shown. The dome housing shall be a pendant mount, pole mount, ceiling mount, surface mount, or corner mount as shown. The housing shall be constructed to be dust and water tight, and fully operational in 100 percent condensing humidity. The housing shall be purged of atmospheric air and pressurized with dry nitrogen, shall be equipped with a fill valve and overpressure valve, and shall have a pressure indicator visible from the exterior. The housing shall be equipped with supplementary camera mounting blocks or supports as needed to position the specified camera and lens to maintain the proper optical centerline. All electrical and signal connections required for operation of the camera and lens shall be supplied. The housing shall provide the environment needed for camera operation. The lower dome shall be black opaque acrylic and shall have a light attenuation factor of not more than 1 f-stop. The housing shall be equipped with integral pan/tilt complete with wiring, wiring harnesses, connectors, receiver/driver, pan/tilt control system, pre-position cards, or any other hardware and equipment as needed to provide a fully functional pan/tilt dome. The pan/tilt shall have heavy duty bearings and hardened steel gears. The pan/tilt shall be permanently lubricated. The motors shall be thermally or impedance protected against overload damage. Pan movement shall be 360 degrees and tilt movement shall not be less than plus and minus 90 degrees. Pan speed shall not be less than 20 degrees per second, and tilt speed shall not be less than 10 degrees per second.

G. Exterior wall Mount: The exterior camera wall mount shall be 24 inches long, and shall have an adjustable head for mounting the camera. The wall mount and head shall be constructed of aluminum, stainless steel, or steel with a corrosion-resistant finish. The head shall be adjustable for not less than plus and minus 90 degrees of pan, and not less than plus and minus 45 degrees of tilt. If the bracket is to be used in conjunction with a pan/tilt the bracket shall be supplied without the adjustable mounting head and shall have a bolt hole pattern to match the pan/tilt base.

H. Pan/Tilt Mount: The pan/tilt mount shall be capable of supporting the camera, lens and housing specified. If the pan/tilt is to be mounted outdoors, the pan/tilt shall be weatherproof, and sized to accommodate the camera, lens and housing weight plus maximum wind loading encountered at the installation site. The pan/tilt shall have heavy duty bearings, hardened steel gears externally adjustable limit stops for a pan and tilt, and mechanical, dynamic or friction brakes. Pa/tilt shall be permanently lubricated. The motors shall be thermally or impedance protected against overload damage. Pan movement shall not be less than 0 to 350 degrees tilt movement shall not be less than plus and minus 90 degrees. Pan speed shall not be less than 6 degrees per second, and tilt speed shall not be less than 3 degrees per second. The pan/tilt shall be supplied complete with wiring, wiring harnesses, connectors, receiver/driver, pan/tilt control system, pre-position cards, or any other hardware and equipment as needed to provide a fully functional pan/tilt mount to fulfill the site design requirements.

6.2.8 Video Monitor:

A. Video Monitor: All electronic components and circuits shall be solid state except for the picture tube. The monitor shall have a stabilized high voltage power supply, and regulated low voltage power supplies. The monitor shall have automatic frequency control (AFC) and horizontal resolution not less than 280 lines at the center of the picture tube. The video input shall allow switchable loop-through or 75 ohm termination. The monitor shall have circuitry for automatic degaussing. The monitor shall operate on 60 Hz AC power, and shall be capable of operating at a voltage of 105 to 130 Volts.

B. Picture Tube: The monitor shall have a 20 inch picture tube measured diagonally.

C. Configuration: The monitor shall configured in a rack mount. The rack mount shall fit in a standard EIA 19 inch rack as described in ECA EIA/ECA 310. Monitors shall not interfere with each other when rack mounted or operated next to each other.

D. Controls: Front panel controls shall be provided for power on/off, horizontal hold, vertical hold contrast, and brightness. The monitor shall have switchable DC restoration.

E. Connectors for Video Monitor: Video signal input and output shall be by BNC connectors.

6.2.9 Video Switcher: The switcher shall conform to CEA 170 specifications, and shall be a vertical interval switcher. Electronic components, subassemblies, and circuits of the switcher shall be solid state. The switcher shall be microprocessor based and software programmable. The switcher shall be a modular system that shall allow for expansion or modification of inputs, outputs, alarm interfaces, and secondary control stations by addition of the appropriate modules. Switcher components shall operate on 120 volts 60 Hz AC power. The switcher central processor unit shall be capable of being interfaced facility security system for integrated operation and control. The video switcher central processing unit (CPU) shall have the capability of accepting time from a master clock supplied in ASCII format through a TIA-232 input. All components, modules, cables, power supplies, software, and other items needed for a complete and operable CCTV switching system shall be provided. Switcher equipment shall be rack mounted unless otherwise specified. Rack mount hardware shall be supplied to mount the switcher components in a standard 19 inch rack as described in ECA EIA/ECA 310.

A. Switcher Software: The switcher shall be software programmable, and the software shall be supplied as part of the switcher. The software shall be installed in the switcher CPU, and shall be configured as required by the site design. Changes or alterations of features under software control shall be accomplished through software programming without changes in hardware or system configuration. The switcher shall retain the current program for at least 6 hours in the event of power loss, and shall not require reprogramming in order to restart the system.

B. Switcher Matrix: The switcher shall be a programmable crosspoint switcher capable of switching any video input to any video output. The switcher to be installed at the site shall be configured to switch 16 cameras to 2 monitors, and shall have an expansion capability of not less than 10 percent.

C. Switcher Modular Expansion: The switcher shall be expandable in minimum increments as specified below.

D. Input Module: Hardware expansion modules shall be provided to expand the switcher matrix configuration in increments of at least 8 camera inputs.

F. Output Module: Hardware expansion modules shall be provided to expand the switcher matrix configuration in increments of at least 4 video outputs.

G. Alarm Interface: an alarm interface shall be furnished with the switcher. The interface shall be compatible with the IDS and ACS alarm annunciation system. The alarm interface shall monitor alarm closures for processing by the switcher CPU. Alarm inputs to the alarm interface shall be relay contact or through an ITA-232 interface. The alarm interface shall be modular and shall allow for system expansion. The alarm interface to be installed at the site shall be configured to handle alarm points, and shall have an expansion capability of not less than 10 percent. An output shall be provided to actuate a video recorder.

H. Switcher response Time and Alarm Processing: The switcher response time shall not be greater than 200 milliseconds from the time the alarm is sensed at the switcher alarm interface, until the picture is displayed on the monitor. The switcher shall continue to process subsequent alarms and shall put them in a queue. The operator shall be able to view the alarms in queue by operating an alarm release function which switches the subsequent alarms to the monitor in the order of occurrence.

I. Control Keyboards: control and programming keyboards shall be supplied for the video switcher at the security center. The control keyboard shall provide the interface between the operator and the CCTV system, ad shall relay commands from the operator to the switcher CPU. The keyboard shall provide control of the video switcher functions needed for operation and programming of the video switcher. Controls shall include, but not be limited to: programming the switcher, switcher control, lens function control, pan/tilt/zoom (PTZ) control, control of environmental housing accessories, and annotation programming. If the switcher CPU requires an additional text keyboard for system management functions, the keyboard shall be supplied as part of the video switcher.

J. Accessory Control Equipment: The video switcher shall be equipped with signal distribution units, preposition cards, expansion units, cables, software or any other equipment needed to ensure that the CCTV system is complete and fully operational.

K. Connectors for Video Switcher: Video signal input and output shall be by BNC connectors.

L. Video Annotation: Video annotation equipment shall be provided for the video switcher. The annotation shall be alphanumeric and programmable for each video source. Annotation to be generated shall include, but not be limited to: individual video source identification number, time (hour, minute, second) in a 24 hour format, date (month, day, year), and a unique, user-defined title with at least 8 characters. The annotation shall be inserted onto the source video so that both shall appear on a monitor recording. The lines of annotation shall be movable for horizontal and vertical placement on the video picture. The annotation shall be automatically adjusted for date. Programmed annotation information shall be retained in memory for at least 4 hours in the event of power loss.

6.2.10 Video Multiplexer: The video multiplexer shall be a multi-channel record and playback system with the capability of color real time multi-screen viewing. Electronic components, sub-assemblies, and circuits of the multiplexer shall be solid state. The multiplexer, using time division multiplexing, shall permit up to 16 camera inputs to be recorded simultaneously.

All 16 camera inputs shall be capable of being viewed on a video monitor either live or recorded. The multiplexer shall allow for viewing of either live video or input from the DVM (simplex Operation). The inputs shall be capable of simultaneous viewing on the monitor or full screen individually and in other multi-screen modes such as 2x2, 3x3, 4x4 or other configurations. The viewing format shall also permit 2x dynamic zoom capability, full screen. The multiplexer shall be compatible with EIA/NTSC video cameras. External camera synchronization shall not be required for proper operation of the video multiplexer. Control of all functions of the multiplexer shall be provided either by a full function keyboard or by pushbutton selection with on-screen menu driven set-up. The multiplexer shall retain the current program for a t least 6 hours in the event of power loss.

6.2.11 Digital Video Management (DVM): The DVM shall be specifically designed as a time lapse recorder for use in security systems. The DVM shall operate on 120 volts 60 Hz AC power. Resolution of the DVM in normal play mode shall not be less than 300 horizontal lines in color. Signal-to-noise ratio shall not be less than 40 dB. DVM Recording Resolution (2CIF) with a minimum of 5 frames per second (FPS) and a real time event recording rate of no less than 15 FPS. Bidder shall coordinate with GDOE on final desired FPS for event recording. A 24 hour battery back-up shall be provided to protect time/date and programmed information. Quantity of Digital Video Managers (DVMs), servers, monitoring workstations, printers, shall be provided by Bidder and coordinated with GDOE. DVM shall provide adequate space for seven (7) days recording at a rate of 5 frames per second PLUS 10 percent expansion capability. DVM recording protocols will be coordinated with GDOE's operational staff.

A. Recording and Playback: The DVM shall have a contact closure alarm signal input which shall automatically switch the recorder into standard play, record mode when an alarm is initiated. The DVM shall put a cue mark on the tape at the beginning of an alarm event recording. The alarm event record time shall be selectable for up to 3 minutes of automatic recording as a minimum. Playback functions shall include: alarm search, fast forward search, fast rewind search, rewind/fast forward, play, slow motion or step field/frame, and pause/still. The DVM shall provide connectors for alarm trigger signal input and output. All video signals will be recorded to a digital video manager (DVM) for a predetermined period of time no less than seven (7) days to be coordinated with the GDOE's operational staff. System shall have the capability to have recordings archived to permanent media. Depending on the GDOE's policy, recording may also be completely erased from the system. Bidder shall coordinate with GDOE for archiving policy. DVM recording protocols will be coordinated with GDOE's operational staff.

6.2.12 Video Signal Equipment: The following video signal equipment shall conform to CEA 170. Electrically powered equipment shall operate on 120 Volts 60 Hz AC power. All video signal inputs and outputs shall be by BNC connectors.

A. Ground Loop Corrector: The ground loop corrector shall eliminate the measured ground loop interference (common mode voltage) in wireline or coaxial video transmission lines. The ground loop corrector shall pass the full transmitted video bandwidth with no signal attenuation or loss. Clamping ground loop correctors shall be capable of rejecting at least an 8 volt peak-to-peak 60 Hz common mode signal. Ground isolation transformers shall be capable of rejecting at least a 10 volt peak-to-peak 60 Hz common d=mode signal. Ground isolation amplifiers shall be capable of rejecting at least a 30 volt peak-to-peak 60 Hz common mode signal. Differential ground loop correctors shall be capable of rejecting at least a 100 volt peak-to-peak 60 Hz common mode signal.

B. Video Loss/Presence Detector: the video loss/presence detector shall monitor video transmission lines for presence of the video signal. The detector shall annunciate an alarm when the video signal drops below a pre-set threshold level. A threshold level adjustment shall be provided for each video channel and the threshold level shall be continuously adjustable through a lockable front panel control. A front panel reset control shall be provided for each video channel, which shall reset the detector after an alarm. The video loss alarm shall be annunciated through a front panel LED and a contact closure as a minimum. Video input shall be loop-through, and the video shall be unaffected when the detector is turned off. The detector shall not attenuate or reduce the level of the video signal passing through it.

C. Video Equalizing Amplifier: The video equalizing amplifier shall be designed to correct loss in video signal level and high frequency attenuation caused by long distance video signal transmission over wireline DTM. The amplifier shall have independent signal gain and equalization controls.

The amplifier shall be capable of equalizing at least 3000 feet of RG-11/U coaxial cable conforming to paragraph CCTV Equipment Video Signal Wiring. The amplifier shall provide a minimum of plus or minus 6 dB of video gain and 12 dB of high frequency compensation. At least one video output shall be provided for each video input. Bandwidth shall be 10 MHz or greater, and frequency response to 8 MHz shall be plus or minus 1 dB or less. Hum and noise shall be 50 dB below 1 volt peak-to-peak or better. Video inputs shall be 75 ohm unbalanced, terminating, differential grounded. Video outputs shall be 75 ohm, differential, source terminated, 1 volt peak-to-peak. Output isolation shall be 40 dB or greater at 5 MHz.

D. Video Distribution Amplifier: The video distribution amplifier shall be designed to distribute a single, 75 ohm, unbalanced video input signal to a minimum of 4, 75 ohm, source terminated video outputs. The distribution amplifier shall have not less than plus or minus 3 dB of gain adjustment for the video output. Output isolation shall be 40 dB or greater at 5 MHz. Bandwidth shall be 10 MHz or greater, and frequency response to 8 MHz shall be plus or minus 0.5 dB or less. Hum and noise shall be 55 dB below 1 volt peak-to-peak or better.

F. Master Video Sync Generator: The master video sync generator shall generate horizontal drive, vertical drive, blanking, and sync signals as a minimum, with at least one 75 ohm output provided for each signal. The master oscillator crystal shall be pre-aged, and temperature stabilized, ovenized or temperature compensated. The sync generator shall have a composite video input and shall lock to the incoming video signal. If no video is present at the video input, the sync generator shall switch to internal crystal control. Not less than 2.5 microseconds advance and 2.5 microseconds delay of horizontal phase shall be provided. Vertical blanking width adjustment shall be provided. Vertical blanking width adjustment shall have a minimum selection range of 19, 20, and 21 lines.

G. Video Sync Distribution Amplifier: The sync distribution amplifier shall be a regenerative amplifier designed to distribute a sync signal input to not less than 6, 75 ohm outputs. Output level shall remain constant and shall not be affected by input level variation. Output isolation shall be greater than 35 dB at 5 MHz. A high impedance loop through shall be provide in addition to the 6 outputs. The distribution amplifier shall have continuously variable delay range of at least 250 nanoseconds to 2.2 microseconds. The delay shall be adjustable through a front panel control.

6.2.13 Accessories: standard 19 inch electronic rack cabinets conforming to ECA EIA/ECA 310 shall be provided for the CCTV system at the security center and remote control/monitoring sites as shown.

6.2.14 Wire and Cable: Provide all wire and cable not indicated as GDOE Furnished Equipment. All wire and cable components shall be able to withstand the environment the wire or cable is installed in for a minimum of 20 years.

A. Low Voltage Control Wiring: Twisted pair low voltage control wiring shall be provided. Plenum or riser cables shall be IEEE C2 CL2P certified.

B. Digital Data Interconnection Wiring: Interconnecting cables carrying digital data between equipment located at the security center shall be not less than 20 AWG and shall be stranded copper wire for each conductor. The cable or each individual conductor within the cable shall have a shield that provides 100 percent coverage. Cables with a single overall shield shall have a tinned copper shield drain wire. Plenum or riser cables shall be IEEE C2 CL2P certified.

6.2.15 Pre-Delivery Testing:

A. General: Assemble the test CCTV system as specified, and perform tests to demonstrate that the performance of the system complies with the contract requirements in accordance with the approved pre-delivery test procedures. The tests shall take place during regular daytime working hours on weekdays. Model numbers of equipment tested shall be identical to those to be delivered to the site. Original copies of all data produced during pre-delivery testing, including results of each test procedure, shall be delivered to the GDOE at the conclusion of pre-delivery testing prior to GDOE approval of the test. The test report shall be arranged so that all commands, stimuli, and responses are correlated to allow logical interpretation.

B. Test Setup: Provide the equipment needed for the test setup and configure it to provide alarm actuated camera call-up and alarm recording as required to emulate the installed system. The test setup shall consist of at least 4 complete camera circuits. The alarm signal input to the CCTV test setup shall be by the same method that is used in the installed system. The video switcher shall be capable of switching any camera to any monitor and any combination of cameras to any combination of monitors. The minimum test setup shall include.

1. Four video cameras and lenses, including dome cameras if required for the installed system.
2. Video monitors.
3. Digital Video Manager.
4. Video switcher including video input modules, video output modules, and control and applications software.
5. Alarm input panel if required for the installed system.
6. Pan/tilt mount and pan/tilt controller.
7. Any ancillary equipment associated with a camera circuit such as equalizing amplifiers, video loss/presence detectors, terminators, ground loop correctors, surge protectors. Or other in-line video devices.
8. Cabling for all components.

Part 6.3 Execution:

6.3.1 Installation: Install all system components and appurtenances in accordance with the manufacturer's instructions sand IEED C2, and furnish all necessary connectors, terminators, interconnections, services, and adjustments required for a complete and operable system. DTM shall not be pulled into conduits or placed in raceways, compartments, outlet boxes, junction boxes, or similar fittings with other building wiring. All other electrical work shall be as specified in the above sections including grounding to preclude ground loops, noise, and surges from adversely affecting system operation. Cameras, peripherals, servers and system software will be installed and maintained by an authorized vendor or contractor that is certified in the installation and maintenance of the CCTV equipment.

A. Existing Equipment: Connect to and utilize existing video equipment, video and control signal transmission lines, and devices as shown. Video equipment and signal lines that are usable in their original configuration without modification may be used with GDOE approval. Perform a field survey, including testing and inspection of all existing video equipment and signal lines intended to be incorporated into the CCTV system, and submit a report to the GDOE as part of the site survey report defined in paragraph "Group II Technical Data Package." For those items considered nonfunctioning, provide (with the report) specification sheets, or written functional requirements to support the findings and the estimated cost to correct the deficiency. As part of the report, include the scheduled need date for connection to all existing equipment. Make written requests and obtain approval prior to disconnecting any signal lines and equipment, and creating equipment downtime. Such work shall proceed only after receiving GDOE approval of these requests. If any device fails after the Bidder has commenced work on that device, signal or control line, diagnose the failure and perform any necessary corrections to the equipment. The GDOE is responsible for maintenance and repair of GDOE equipment. The Bidder will be held responsible for repair costs due to Bidder negligence or abuse of GDOE equipment.

B. Enclosure Penetrations: All enclosure penetrations shall be from the bottom unless the system design requires penetrations from other directions. Penetrations of interior enclosures involving transitions of conduit from interior to exterior, and all penetrations on exterior enclosures involving transitions of conduit from interior to exterior, and all penetrations on exterior enclosures shall be sealed with rubber silicone sealant to preclude the entry of water. The conduit riser shall terminate in a hot-dipped galvanized metal cable terminator. The terminator shall be filled with an approved sealant as recommended by the cable manufacturer and in such a manner that the cable is not damaged.

C. Cold Galvanizing: All field welds and brazing on factory galvanized boxes, enclosures, and conduits shall be coated with a cold galvanized paint containing at least 95 percent zinc by weight.

D. Interconnection of Console Video Equipment: Connect signal paths between video equipment with RG-6/U coaxial cable. Cables shall be as short as practicable for each signal path without causing strain at the connectors. Rack mounted equipment on slide mounts shall have cables of sufficient length to allow full extension of the slide rails from the rack.

E. Cameras: Install the cameras with the proper focal length lens as determined for each zone; connect power and signal lines to the camera; set cameras with fixed iris lenses to the proper f-stop to give full video level; aim camera to give field of view as needed to cover the alarm zone; aim fixed mount cameras installed outdoors facing the rising or setting sun sufficiently below the horizon to preclude the camera looking directly at the sun; focus the lens to give a sharp picture over the entire field of view; and synchronize all cameras so the picture does not roll on the monitor when cameras are selected. Dome cameras shall have all preset positions defined and installed.

F. Monitors: Install the monitors as shown and specified; connect all signal inputs and outputs as shown and specified; terminate video input signals as required; and connect the monitor to AC power.

G. Switcher: Install the switcher according to manufacturer's instructions; connect all subassemblies as specified by the manufacturer and as shown; connect video signal inputs and outputs as shown and specified; terminate video inputs as required; connect alarm signal inputs and outputs as shown and specified; connect control signal inputs and outputs for ancillary equipment or secondary control/monitoring sites as specified by the manufacturer and as shown; connect the switcher CPU and switcher subassemblies to AC power; load all software as specified and required for an operational CCTV system configured for the site requirements, including data bases, operational parameters, and system, command, and application programs; provide the original and 2 backup copies for all accepted software upon successful completion of the endurance test; and program the video annotation for each camera.

H. Video Recording Equipment: Install the video recording equipment as shown and as specified by the manufacturer; connect video signal inputs and outputs as shown and specified; connect alarm signal inputs and outputs as shown and specified; and connect video recording equipment to AC power.

I. Video Signal Equipment: Install the video signal equipment as specified by the manufacturer and as shown; connect video or signal inputs and outputs as shown and specified; terminate video inputs as required; connect alarm signal inputs and outputs as required; connect control signal inputs and outputs as required; and connect electrically powered equipment to AC power.

J. Camera Housings, Mounts, and Polls: Install the camera housings and mounts as specified by the manufacturer and as shown, provide mounting hardware sized appropriately to secure each camera, housing and mount with maximum wind loading encountered at the site; provide a foundation for each camera pole as specified and shown; provide a ground rod for each camera pole and connect the camera pole to the ground rod; provide electrical and signal transmission cabling to the mount location; connect signal lines and AC power to mount interfaces; and connect pole wiring harness to camera.

6.3.2 System Startup: Do not apply power to the CCTV system until the following items have been completed:

A. CCTV system equipment items and DTM have been set up in accordance with manufacturer's instructions.

B. A visual inspection of the CCTV system has been conducted to ensure that defective equipment items have not been installed and that there are no loose connections.

C. System wiring has been tested and verified as correctly connected as indicated.

D. All system grounding and transient protection systems have been verified as properly installed and connected as indicated.

E. Power supplies to be connected to the CCTV system have been verified as the correct voltage, phasing, and frequency as indicated.

F. Satisfaction of the above requirements shall not relieve the Bidder of responsibility for incorrect installation, defective equipment items, or collateral damage as a result of Bidder work/equipment.

6.3.3 Training:

A. General: Conduct training courses for designated personnel in the maintenance and operation of the CCTV system as specified. The training shall be oriented to the specific system being installed under this contract. Training manuals shall be delivered for each trainee with two additional manuals delivered for archiving at the project site. The manuals shall include an agenda, defined objectives for each lesson, and a detailed description of the subject matter for each lesson. The Bidder is responsible for furnishing all audio-visual equipment and all other training materials and supplies.

Where the Bidder presents portions of the course through the use of audio-visual material, copies of the audio-visual materials shall be delivered to the GDOE, either as a part of the printed training manuals or on the same media as that used during the training sessions. A training day is 8 hours of instruction, including two 15 minutes breaks and excluding lunchtime, Monday through Friday, during the daytime shift in effect at the facility. For guidance in planning the required instruction, assume the attendees will have a high school education or equivalent. Approval of the planned training schedule shall be obtained from the GDOE at least 30 days prior to the training.

B. Operator's Training: The course shall be taught at the project site for five consecutive training days during or after the Bidder's filed testing. A maximum of 12 personnel will attend the course. No part of the training given during this course will be counted toward completion of the performance verification test. The course shall consist of classroom instruction, hands-on-training, instruction on the specific hardware configuration of the installed system, and specific instructions for operating the installed system. The course shall demonstrate system start up, system, operation, system shutdown, system recovery after a failure, the specific hardware configuration, and regarding operation of the installed CCRV system. Prepare and insert additional training material in the training manuals when the need for additional material becomes apparent during instruction. Prepare a written Operator's Training Report after the completion of the course. List in the report each student at the end of this course. Submit the report before the end of the performance verification test. The course shall include:

1. General CCTV hardware, installed system architecture and configuration.
2. Functional operation of the installed system and software.
3. Operator commands.
4. Alarm interfaces.
5. Alarm reporting.
6. Fault diagnostics and correction.
7. General system maintenance.
8. Replacement of failed components and integration of replacement components into the operating CCTV system.

6.3.4 Site Testing:

A. General: Provide all personnel, equipment, instrumentation, and supplies necessary to perform all site testing. The GDOE will witness all performance verification and endurance testing. Written permission shall be obtained from the GDOE before proceeding with the next phase of testing. Original copies of all test data produced during performance verification and endurance testing shall be turned over to the GDOE at the conclusion of each phase of testing prior to GDOE approval of the test.

B. Contractor's Field Testing: Calibrate and test all equipment, verify DTM operation, place the integrated system in service, and test the integrated system. Submit a report describing all results of functional tests, diagnostics, and calibrations including written certification to the GDOE that the installed complete system has been calibrated, tested, and is ready to begin performance verification testing. The report shall also include a copy of the approved performance verification test procedure. In addition, make a master DVD recording showing typical day and night views of each camera in the system and shall deliver the tape with the report. Note any objects in the field of view that might produce highlights that could cause camera blinding. Note any objects in the field of view or anomalies in the terrain which may cause blind spots.

Note if a camera cannot be aimed to cover the zone and exclude the rising or setting sun from the picture. Note night assessment capabilities and whether lights or vehicle headlights cause blooming or picture degradation. If any of the above conditions or other conditions exist that cause picture degradation or interfere with the camera field of view, inform the GDOE. The DVD shall be recorded using the DVM installed as part of the CCRV system. Provide the GDOE with the original DVD as part of the documentation of the system and submit a letter of certification stating that the CCTV system is ready for performance verification testing The field testing shall, as a minimum, include:

1. Verification that the video transmission system and any signal or control cabling have been installed, tested, and approved as specified.

2. When the system includes remote control/monitoring stations or remote switch panels, verification that the remote devices are functional, communicate with the security center, and perform all functions as specified.

3. Verification that the switcher is fully functional and that the switcher software has been programmed as needed for the site configuration.

4. Verification that switcher software is functioning correctly. All software functions shall be exercised.

5. Verification that video multiplexers are functioning correctly.

6. Operation of all electrical and mechanical switcher controls and verification that the control performs the designed function.

7. Verification that all video sources and video outputs provide a full bandwidth signal that complies with CEA 170 at all video inputs.

8. Verification that all video signals are terminated properly.

9. Verification that all cameras are aimed and focused properly. Conduct a walk test of the area covered by each camera to verify the field of view.

10. Verification that cameras facing the direction of rising or setting sun are aimed sufficiently below the horizon so that the camera does not view the sun directly.

11. If vehicles are used in proximity of the assessment areas, verification of night assessment capabilities and determination if headlights cause blooming or picture degradation.

12. Verification that all cameras are synchronized and that the picture does not roll when cameras are switched.

13. Verification that the alarm interface to the IDS and ACS is functional and that automatic camera call-up is functional with appropriate video annotation for all designated IDS and ACS alarm points and cameras.

14. When pan/tilt mounts are used in the system, verification that the limit stops have been set correctly. Verification of all controls or pan/tilt or zoom mechanisms are operative and that the controls perform the desired function. If preposition controls are used, verification that all home positions have been set correctly, and have been tested for auto home functions and correct home position.

15. When dome camera mounts are used in the system, verify that all preset positions are correct and that the dome also operates correctly in a manual control mode.

C. Performance Verification Test: Demonstrate that the completed CCTV system complies with the bid requirements. Using approved test procedures, all physical and functional requirements of the project shall be demonstrated and shown. The performance verification test, as specified, shall not be started until receipt by the Bidder of written permission for the GDOE, based on the Bidder's written report. This shall include certification of successful completion of Bidder Field Testing as specified in paragraph "Bidder's Field Testing," and upon successful completion of training as specified. The GDOE may terminate testing at any time when the system fails to perform as specified. Upon termination of testing by the GDOE or by the Bidder, commence as assessment period as described for Endurance Testing Phase II. Upon successful completion of the performance verification test, deliver test reports and other documentation as specified to the GDOE prior to commencing the endurance test.

D. Endurance Test:

1. Demonstrate the specified requirements of the completed system. The endurance test shall be conducted in phases as specified. The endurance test shall not be started until the GDOE notifies the Bidder, in writing, that the performance verification test is satisfactorily completed, training as specified has been completed, and correction of all outstanding deficiencies has been satisfactorily completed. If the CCTV system is being installed in conjunction with as ESS, the CCTV performance verification test shall be run simultaneously with the ESS performance verification test. Provide one operator to operate the system 234 hours per day, including weekends and holidays, during Phase I and Phase III endurance testing, in addition to any GDOE personnel that may be made available. The GDOE may terminate testing at any time the system fails to perform as specified. Upon termination of testing by the GDOE or by the Bidder, commence an assessment period as described for Phase II. During the last day of the test verify the operation of each camera. Upon successful completion of the endurance test, deliver test reports and other documentation as specified to the GDOE prior to acceptance of the system.

2. Phase I (Testing): The test shall be conducted 24 hours per day for 15 consecutive calendar days, including holidays, and the system shall operate as specified. Make no repairs during this phase of testing unless authorized by the GDOE in writing. If the system experiences no failures during Phase I testing, the Bidder may proceed directly to Phase III testing after receipt of written permission for the GDOE.

3. Phase II (Assessment): After the conclusion of Phase I, identify all failures, determine causes of all failures, repair all failures, and deliver a written report to the GDOE. The report shall explain in detail the nature of each failure, corrective action taken, results of tests performed, and shall recommend the point at which testing should be resumed. After delivering the written report, convene a test review meeting at the job site to present the results and recommendations to the GDOE. The meeting shall not be scheduled earlier than 5 business days after receipt of the report by the GDOE. As a part of this test review meeting, demonstrate that all failures have been corrected by performing appropriate portions of the performance verification test. Based on the Bidder's report and the test review meeting, the GDOE will determine the restart date, or may require that Phase I be repeated. If the retest is completed without any failures, the Bidder may proceed directly to Phase II testing after receipt of written permission from the GDOE.

4. Phase III (Testing): The test shall be conducted 24 hours per day for 15 consecutive calendar days, including holidays, and the system shall operate as specified. Make no repairs during this phase of testing unless authorized by the GDOE in writing.

5. Phase IV (Assessment): After the conclusion of Phase III, identify all failures, determine causes of all failures, repair all failures, and deliver a written report to the GDOE. The report shall explain in detail the nature of each failure, corrective action taken, results of tests performed, and shall recommend the point at which testing should e resumed. After delivering the written report, convene a test review meeting at the job site to present the results and recommendations to the GDOE.

The meeting shall not be scheduled earlier than 5 business days after receipt of the report by the GDOE. As a part of this test review meeting, demonstrate that all failures have been corrected by repeating appropriate portions of the performance verification test. Based on the Bidder's report and the test review meeting, the GDOE will determine the restart date, and may require that Phase III be repeated. Do not commence any required retesting until after receipt of written notification by GDOE. After the conclusion of any retesting which the GDOE may require, the Phase IV assessment shall be repeated as if Phase III had just been completed.

E. Exclusions: The Bidder will not be held responsible for failures resulting from the following:

a. An outage of the main power supply in excess of the capability of any backup power source, provided that the automatic initiation of all backup sources was accomplished.

b. Failure of GDOE furnished DTM circuit, provided that the failure was not due to Bidder furnished equipment, installation, or software.

c. Failure of existing GDOE owned equipment, provided that the failure was not due to Bidder furnished equipment, installation, or software.

ITEM NO.	DESCRIPTION	QTY	UOM	UNIT COST	EXTENDED PRICE
1.1	HS Truman Elementary (Intrusion Detectors (Motion)	11	EA.	$_____	$_____
	Monthly Maintenance Fee	**12**	**MOS.**	**$_____**	**$_____**
2.1	Marcial Sablan Elementary (Intrusion Detectors (Motion)	12	EA.	$_____	$_____
	Monthly Maintenance Fee	**12**	**MOS.**	**$_____**	**$_____**
3.1	MU Lujan Elementary (Intrusion Detectors (Motion)	21	EA.	$_____	$_____
	Monthly Maintenance Fee	**12**	**MOS.**	**$_____**	**$_____**
4.1	Agueda Johnston Middle (Intrusion Detectors (Motion)	21	EA.	$_____	$_____
	Monthly Maintenance Fee	**12**	**MOS.**	**$_____**	**$_____**
5.1	CL Taitano Elementary (Intrusion Detectors (Motion)	7	EA.	$_____	$_____
	Monthly Maintenance Fee	**12**	**MOS.**	**$_____**	**$_____**
6.1	Agana Hts. Elementary (Intrusion Detectors (Motion)	13	EA.	$_____	$_____
	Monthly Maintenance Fee	**12**	**MOS.**	**$_____**	**$_____**
7.1	JQ San Miguel Elementary (Intrusion Detectors (Motion)	15	EA.	$_____	$_____
	Monthly Maintenance Fee	**12**	**MOS.**	**$_____**	**$_____**
8.1	Carbullido Elementary (Intrusion Detectors (Motion)	12	EA.	$_____	$_____
	Monthly Maintenance Fee	**12**	**MOS.**	**$_____**	**$_____**
9.1	PC Lujan Elementary (Intrusion Detectors (Motion)	7	EA.	$_____	$_____
	Monthly Maintenance Fee	**12**	**MOS.**	**$_____**	**$_____**
10.1	Price Elementary (Intrusion Detectors (Motion)	16	EA.	$_____	$_____
	Monthly Maintenance Fee	**12**	**MOS.**	**$_____**	**$_____**
11.1	Untalan Middle (Intrusion Detectors (Motion)	21	EA.	$_____	$_____
	Monthly Maintenance Fee	**12**	**MOS.**	**$_____**	**$_____**

MUST BE SUBMITTED IN ENVELOPE LABELED "BID COST"

ITEM NO.	DESCRIPTION	QTY	UOM	UNIT COST	EXTENDED PRICE
12.1	GWHS (Intrusion Detectors (Motion)	30	EA.	$_____	$_____
12.2	GWHS (Camera)	3	EA.	$_____	$_____
	Monthly Maintenance Fee	**12**	**MOS.**	$_____	$_____
13.1	JM Guerrero Elementary (Intrusion Detectors (Motion)	13	EA.	$_____	$_____
13.2	JM Guerrero Elementary (Camera)	2	EA.	$_____	$_____
	Monthly Maintenance Fee	**12**	**MOS.**	$_____	$_____
14.1	Wenttengel Elementary (Intrusion Detectors (Motion)	20	EA.	$_____	$_____
	Monthly Maintenance Fee	**12**	**MOS.**	$_____	$_____
14.2	Wenttengel Elementary (Camera)	3	EA.	$_____	$_____
	Monthly Maintenance Fee	**12**	**MOS.**	$_____	$_____
15.1	V Benavente Middle (Intrusion Detectors (Motion)	13	EA.	$_____	$_____
15.2	V Benavente Middle (Camera)	2	EA.	$_____	$_____
	Monthly Maintenance Fee	**12**	**MOS.**	$_____	$_____
16.1	M Ulloa Elementary (Intrusion Detectors (Motion)	17	EA.	$_____	$_____
	Monthly Maintenance Fee	**12**	**MOS.**	$_____	$_____
17.1	Upi Elementary (Intrusion Detectors (Motion)	15	EA.	$_____	$_____
	Monthly Maintenance Fee	**12**	**MOS.**	$_____	$_____
18.1	DL Perez Elementary (Intrusion Detectors (Motion)	19	EA.	$_____	$_____
	Monthly Maintenance Fee	**12**	**MOS.**	$_____	$_____
19.1	Machananao Elementary (Intrusion Detectors (Motion)	20	EA.	$_____	$_____
	Monthly Maintenance Fee	**12**	**MOS.**	$_____	$_____
20.1	Finegayan Elementary (Intrusion Detectors (Motion)	20	EA.	$_____	$_____
	Monthly Maintenance Fee	**12**	**MOS.**	$_____	$_____

ITEM NO.	DESCRIPTION	QTY	UOM	UNIT COST	EXTENDED PRICE
21.1	Astumbo Elementary (Intrusion Detectors (Motion)	19	EA.	$_____	$_____
21.2	Astumbo Elementary (Camera)	1	EA.	$_____	$_____
	Monthly Maintenance Fee	**12**	**MOS.**	**$**_____	**$**_____
22.1	Okkudo High (Intrusion Detectors (Motion)	2	EA.	$_____	$_____
22.2	Okkudo High (Camera)	5	EA.	$_____	$_____
	Monthly Maintenance Fee	**12**	**MOS.**	**$**_____	**$**_____
23.1	LBJ Elementary (Intrusion Detectors (Motion)	14	EA.	$_____	$_____
	Monthly Maintenance Fee	**12**	**MOS.**	**$**_____	**$**_____
24.1	Tamuning Elementary (Intrusion Detectors (Motion)	22	EA.	$_____	$_____
	Monthly Maintenance Fee	**12**	**MOS.**	**$**_____	**$**_____
25.1	Chief Brodie Elementary (Intrusion Detectors (Motion)	18	EA.	$_____	$_____
	Monthly Maintenance Fee	**12**	**MOS.**	**$**_____	**$**_____

SPECIFICATIONS PREPARED BY:

CHIEF PROCUREMENT OFFICER

CLAUDIA S. ACFALLE

SAFETY ADMINISTRATOR, GDOE

BRUCE WILLIAMS

POLICE OFFICER, GUAM POLICE DEPARTMENT

JOHN AGUON #529

MUST BE SUBMITTED IN ENVELOPE LABELED "BID COST"

	Name of School	Number of Break-ins					Total	Frequency per Year
		2010-2011	2011-2012	2012-2013	2013-2014	2014-2015		
PHASE 2	Price ES	0	1	0	3		**4**	0.8
	Upi Elementary School	1	0	2	1		**4**	0.8
	D.L. Perez ES	0	0	2	1		**3**	0.6
	P.C. Lujan Elementary	1	1	0	1		**3**	0.6
	B.P. Carbullido ES	0	0	0	1	1	**2**	0.4
	Harry S. Truman	1	0	1	0		**2**	0.4
	Inarajan ES	0	2	0	0		**2**	0.4
	J.P. Torres AS	1	0	0	1		**2**	0.4
	Chief Brodie ES	0	1	0	0		**1**	0.2
	JQSM Elementary	1	0	0	0		**1**	0.2
	Merizo ES	0	0	0	1		**1**	0.2
	Agana Heights	0	0	0	0		**0**	0
	LBJ Elem.	0	0	0	0		**0**	0
	Ordot Chalan Pago ES	0	0	0	0		**0**	0
	Tamuning ES	0	0	0	0		**0**	0
PHASE 3	John F. Kennedy HS	11	0	0	0		**11**	2.2
	Astumbo Middle School	5	1	1	0		**7**	1.4
	Okkodo HS	4	1	1	0		**6**	1.2
	Liguan Elem. School	1	1	0	0		**2**	0.4
	Adacao ES	0	0	0	0		**0**	0
	Tiyan HS	0	0	0	0		**0**	0
TOTAL>>>>>>>>>>>>>>>>>>>>>>		**104**	**86**	**40**	**45**	**9**	**284**	56.8